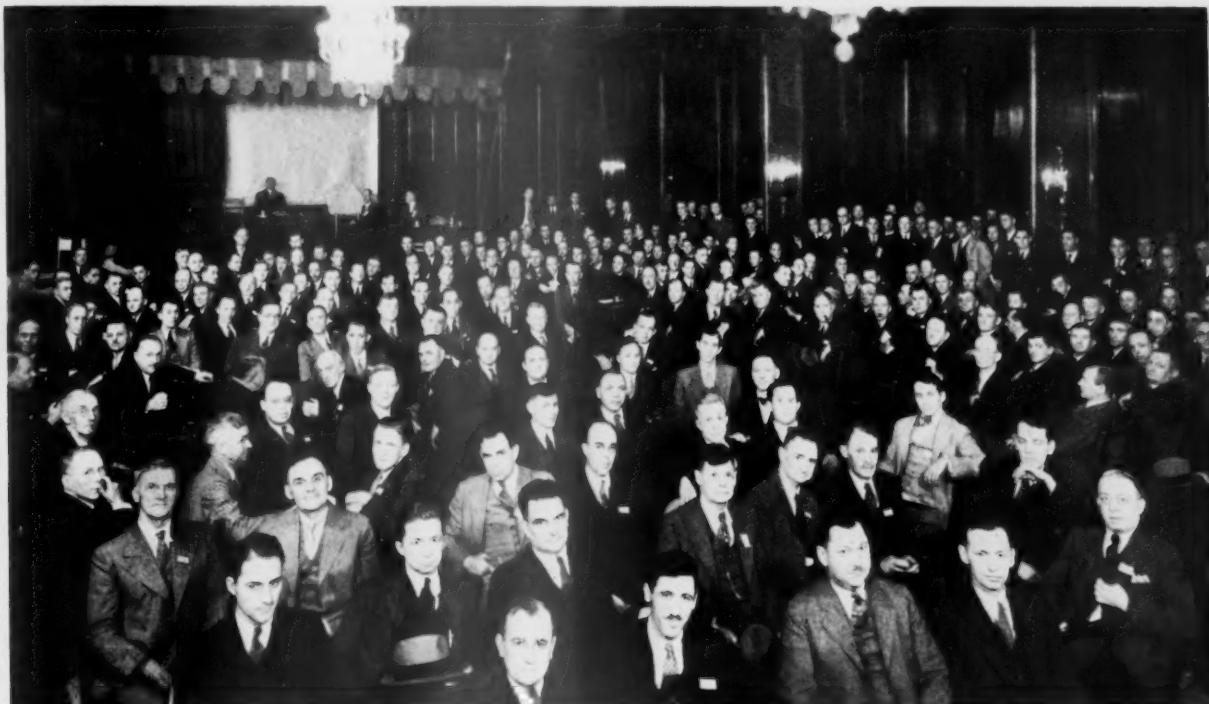


The MINING CONGRESS JOURNAL



*Final Session of the 10th Annual Convention, Coal Division, The
American Mining Congress, Pittsburgh, Pa., May 8-12, 1933*

J U N E
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Why YOU Should be a Member *of the* American Mining Congress

THE American Mining Congress is an organization that represents the entire mining industry. Its sole purpose and effort is to help the mining industry and those who are a part of it in every way possible. The proven value of this effort is abundantly evident in the long record of splendid results it has accomplished in the past and is accomplishing today.

ITS moderate Individual Membership fee is only \$10 a year. This fee not only contributes to the nation-wide work the A. M. C. is doing and from which every Individual Member positively though indirectly benefits, but it also entitles you to many immediate and direct privileges.

YOU are extended the right of Personal Consultation on any mining subject within the scope of the organization.

You will receive from Washington each week a special A. M. C. Government Bulletin. You receive a year's subscription to the Mining Congress Journal—"The Spokesman of the Industry." You are entitled to a direct voice in the national election of officers.

IF you are not now a member of the American Mining Congress, do not postpone joining any longer. Add your strength and influence to that of the many thousands of your fellow mining men who are not satisfied with merely *wanting* to better conditions in our industry, but are interested enough to *do something about it!*

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WASHINGTON, D. C.

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The quick acceptance accorded our new Stump AIR-FLOW coal cleaner has led us to make a number of refinements in the original design. These, added to the operation records of the AIR-FLOW for economy and efficiency, should make this machine more interesting than ever to you.

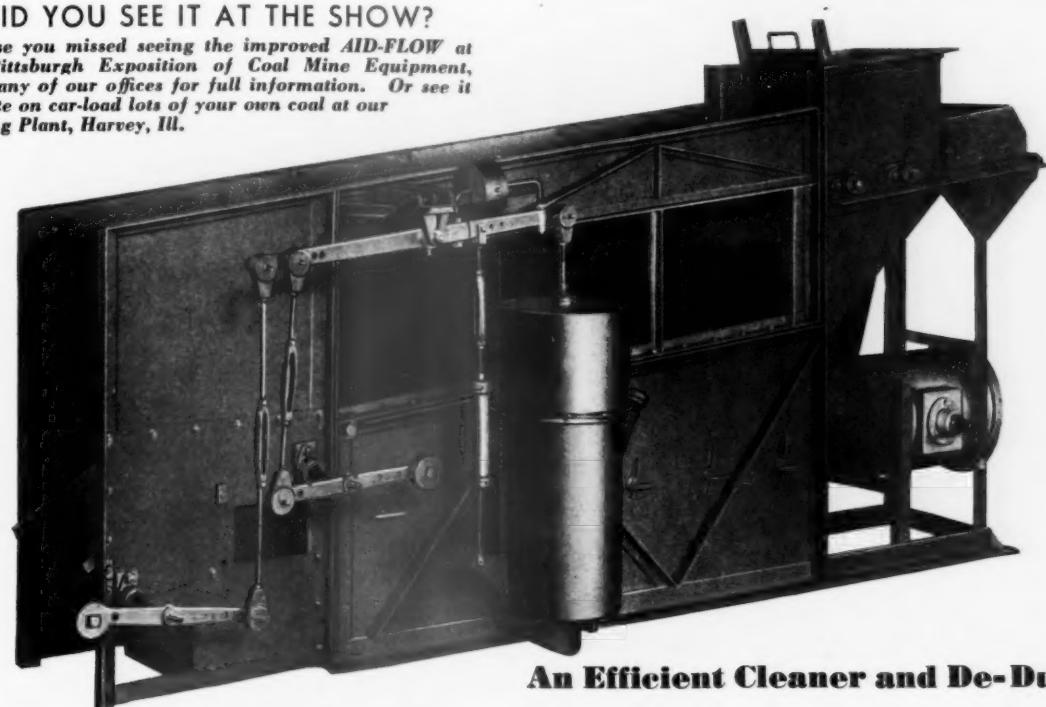
Wire glass has been inserted in both sides, in order that operation may be seen at all times. A reciprocating feeder in connection with the raw coal hopper insures uniform feed. The air-distributing bed has been made more easily adjustable from outside the box, to suit varying coals, and, furthermore, ingenious zoning plates

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An Efficient Cleaner and De-Duster

Stump Air-Flow Coal Cleaner

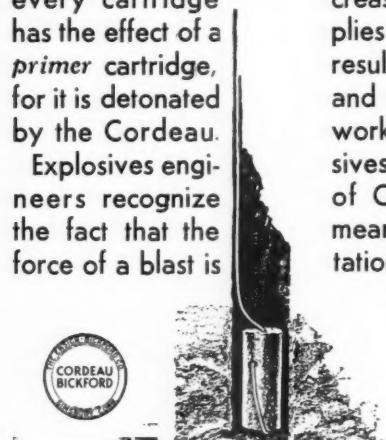


Every cartridge is a primer cartridge with this *insensitive* detonator

A line of Cordeau extending from the top to the bottom of the hole, is in contact with the entire charge. Thus every cartridge has the effect of a *primer* cartridge, for it is detonated by the Cordeau.

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greatest at the point where the charge is detonated. Since Cordeau detonates every cartridge, this increased efficiency applies to the entire load, resulting in more work and more effective work from your explosives. The proper use of Cordeau - Bickford means better fragmentation.



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THE MINING CONGRESS JOURNAL

VOLUME 19
NUMBER 6



JUNE
1933

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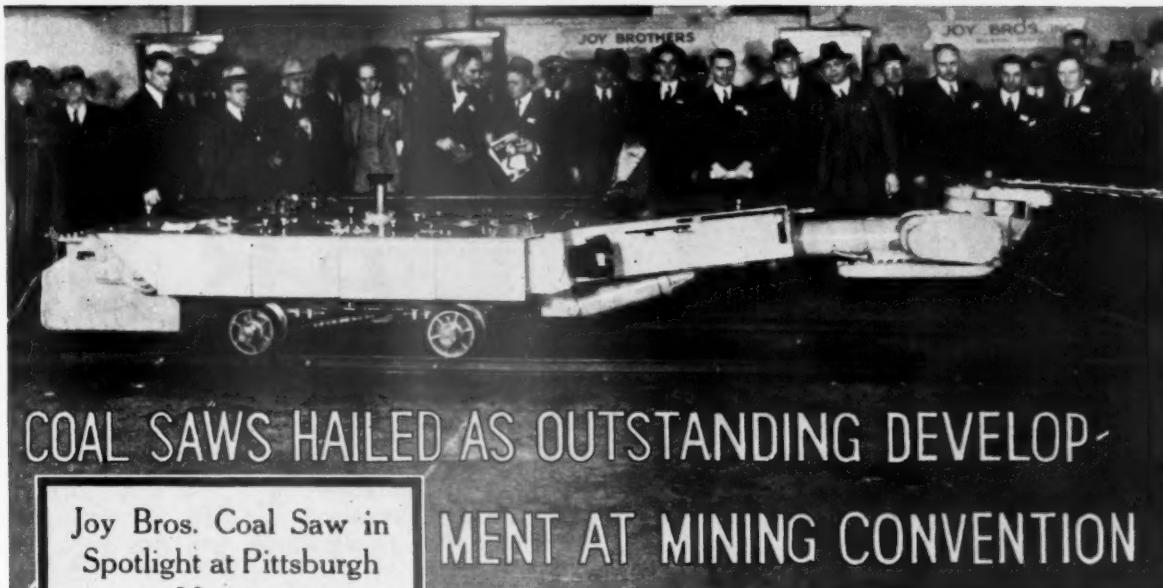
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COAL SAWS HAILED AS OUTSTANDING DEVELOPMENT AT MINING CONVENTION

Joy Bros. Coal Saw in Spotlight at Pittsburgh Meeting.

The eyes of the American mining world today were focused on the industry's latest development in mechanized mining—the coal saw—an Associated Press dispatch from Pittsburgh stated.

"Its development is about the greatest contribution presented for the good of the coal industry it has been my pleasure to come in contact with," said C. D. McLaughlin, superintendent of the Pioneer Coal Co. of Kettle Island, Ky., in a paper read to the convention this morning.

Basing his statements on the operation of five Joy Bros., Inc., coal saws in mines he supervises, Mr. McLaughlin added: "Two men are required to operate the saw; our present cost is 2.8 cents a ton less for sawed coal than for shot coal and sawing has improved the quality and value of the product so much that we get a premium for the large lumps it produces.

"We have had no major breakdowns and at the present time our saws require no more attention than other types of mining machines we have used, if as much. Our maintenance costs, including labor and material thus far, have been negligible."

Repeating that his company's primary interest was to increase the percentage of lump coal, Mr. McLaughlin stated that 66 per cent of the sawed coal came out as four inch lump or larger, as compared with 35 per cent when the coal was removed by explosives.

JOY Brothers New Type 6-A Track Mounted Coal Saw

The industry is amazed with its wide range of flexibility—ease of operation—power to perform—responsiveness of control!

Read what the superintendent of a well known coal company has to say about Coal Saws as reported by the Associated Press dispatch at the left. His company, by the use of these machines, has

**REDUCED MINING COSTS 2.8c PER TON!
OBTAINED PREMIUM PRICES FOR SHOCK FREE LUMP!
INCREASED LUMP PRODUCTION FROM 35% TO 66%!**

Without obligation to you, our engineers will examine your coal properties and report on the benefits that may conservatively be expected from the use of Coal Saws in your mine.

Write today for bulletin No. 21. A reprint of Mr. McLaughlin's paper on Coal Saws, as presented at the American Mining Congress, may also be had for the asking.

JOY Brothers, Inc.
MARION, OHIO, U. S. A.

20 YEARS is a Long Life for MINE TIMBERS



Timber Marked "3" was treated with Zinc Chloride and installed in 1908. An analysis of borings taken in September, 1931, shows three times more Zinc Chloride present than is necessary to keep fungus out.



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THE MINING CONGRESS JOURNAL

Whither Away



The Nation waits, and worries, and hopes.

Rapidly we are drifting from democratic control of governmental affairs to what we hope will be a benevolent autocracy. We are to be directed by an intelligent few instead of by a practical, experienced many, as in the past.

Our great industrial machine was the leader and the marvel of the world. Its success was amazing. Suddenly its machinery became paralyzed. The powerful athlete, after many successful contests, lost his vitality. Over-production and want took the place of regular distribution and enjoyment of both necessities and luxuries. Millionaires became paupers. The savings of the prudent and industrious faded away.

Mr. B. M. Anderson, economist of the Chase National Bank of New York, in a recent Bulletin insists that,

"When it is reflected that a 600-million-dollar increase in member bank reserves from the middle of 1922 to early 1928 gave us the gigantic expansion of commercial credit of 13½ billions in deposits and 14½ billions in loans and investments referred to above, which has created our present disaster."

Money and credit in 1922 were sufficient for carrying on a prosperous business throughout the United States. Six per cent interest upon the excess credit which reached 14½ billions in 1928 earned for its lenders an average of a half-billion a year for the six-year period referred to by Mr. Anderson. A total interest earning of more than three billion dollars paid to bankers for their part in the speculations

which brought disaster and a shrinkage of more than 100 billions of natural wealth.

Some poisonous germ had infected the body politic, which physicians could not or did not accurately diagnose. Many contributing causes were given. Distrust led to withdrawal of the credit with which business had been transacted and everywhere stagnation followed. Those most bitterly opposing government in business now look to governmental control as the only way out.

The power of currency expansion or contraction should be taken from those who can profit by such changes.

The Industry Control Bill answers the question. In the main it seeks to help industry help itself. It sets up the Trade Association idea, permitting each industry to develop—with government supervision and aid—a code of trade practice. It abrogates the anti trust laws; it gives labor a real inning, if not a serious strangle hold; it sets up a stupendous machinery, that may fall of its own weight.

No one can doubt the President's sincerity. He wants to assist industry, not hinder it; he wants to increase employment; raise wages; increase commodity prices, and in general bring back the "Happy Days" that was his campaign slogan. Industry is meeting him half way. It has long urged a modification of the anti trust laws, and is now getting considerably more than it has ever asked for.

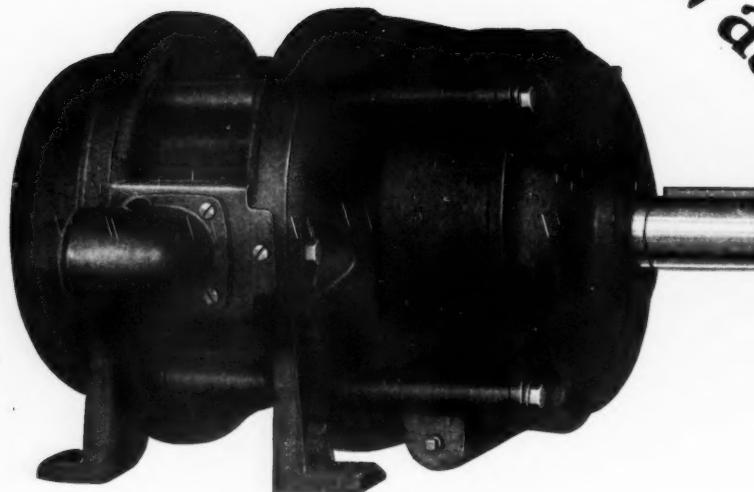
The present situation is fraught with grave dangers, and demands the most earnest, unselfish and complete cooperation of all the groups affected.

We wait and worry and hope.

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will deliver as low as 13 RPM.
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*or a wide range
of speed ratings
in small steps up
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Polyphase, 3/4 to 75 hp.

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Other speeds and horsepower ratings can be furnished on request. Mechanical modifications are available, such as flange mounting, vertical motors, etc.

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If you want a dependable low-speed drive that you can connect directly to your conveyors, fans, blowers, low-speed pumps, you'll find it worth while to consider G-E gear-motors. Write for a copy of our gear-motor bulletin, GES-764. Address the nearest G-E office, or General Electric Company, Schenectady, N. Y.

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GENERAL ELECTRIC

The MINING CONGRESS JOURNAL

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JUNE
1933

A Journal for the entire mining industry published by The American Mining Congress

OUR WASHINGTON

SOME ONE dubbed our national capital "Washington-Merry-Go-Round." And it is living up to its name. Never since war days has Washington been the center of such teeming activity. Congressmen and Senators alike are buried deep beneath the avalanche of business, new and old, that the administration and the people generally are clamoring be given immediate attention. Industry, not being able to pick its way through the maze of proposals, is descending on Washington in hordes. One delegation leaves, only to meet an incoming delegation at the front gate. Lawyers, newspaper men, under-cover men, presidents, clerks, every walk of life, are daily making the Capitol marble more shiny. Meantime, the President is driving with a strong hand and a sharp whip. Proposals that were hoary with age suddenly take on new life and become laws, as, for instance, the Muscle Shoals legislation that has been hauled out of and put back into more pigeonholes than any piece of legislation in a decade. We are on our way—most certainly and definitely—no one seems to know, or care, where. Old customs are being discarded overnight, and revolutionary proposals substituted. The President, himself, admits that "it is a great experiment; if it does not work, we will try something else." Underneath all the change and the swiftly moving current lies a dependable confidence. Each day industry is getting its feet on more tangible ground, and already, everywhere, the spirit of the pioneer, the challenge to defeat, is evident. America can not and will not be "licked."

ENCOURAGEMENT

THREE ARE MANY signs which point strongly to a revival of business. None is more potent than the recent convention of the Coal Division, of The American Mining Congress, where 3,482 delegates, interested in the future of the coal industry, registered and spent four days discussing their production problems and viewing the great exhibit of mining machinery and supplies. There was a distinct atmosphere of optimism in the gathering. Problems were attacked with renewed vigor, and operators wholeheartedly and energetically beset themselves to finding new avenues to safe and efficient production.

R. L. Ireland, Jr., speaking in behalf of the Division, challenged the financial and sales end of the industry to show the same teamwork and cooperation as indicated in this convention of those responsible for production. It was a great day for the coal industry. It was doubly significant when contrasted against the political cries that coal is a disorganized industry, and that the Government must lend a guiding hand. Coal official and mine foreman rubbed shoulders, each determined to gain everything gainable from the feast of facts presented. No one viewing this great group could fail to note the sincerity, the efficiency, and the cooperative spirit of the coal industry.

MINE ASSESSMENT WORK

THE ENACTMENT of Senator Borah's bill, providing for suspension of assessment work on mining claims, constitutes a material relief benefit to those individuals and groups who, in the face of difficult times and hazardous circumstances, are striving to carry on with the development of the nation's mineral wealth.

The group of western Congressmen, headed by Representative James G. Scrugham, of Nevada, is to be particularly commended for the passage of this legislation at this time with the thousands of bills which have been introduced. They were able to secure a rule placing the suspension of assessment work bill on the calendar and to accomplish its passage in the House. As the result, mining claims representing the sole capital of many poor but courageous prospectors and miners may be saved.

"MANY JOBS ARE GONE"

WE ARE REPRODUCING here, an editorial which has appeared in 135 newspapers throughout the United States, from Maine to California; from Florida to Alaska, and points intermediate. The discussion of "What to Do with the Surplus Miner," presented to the Pittsburgh meeting of The Coal Division, The American Mining Congress, called forth this tremendous national presentation of the subject:

NOT all of the unemployment problem is due to the depression. If we should have, overnight, a resumption of 1929 activity we would still have many men who could not get jobs. A lot of the men who were paid off back in the boom days were paid off permanently. Their jobs are gone for good.

"An example of this is to be found in the coal industry.

"The American Mining Congress the other day got a report from Clarence E. Pickett, executive secretary of the American Friends Service committee, showing that at least 200,000 coal miners are never again going to make a living at their old trade.

"The plight of these men is not due to the depression. Their industry has simply moved out from under them. Sooner or later they have got to be absorbed into other industries, and before a way of doing this is figured out a lot of people are going to have gray hairs and furrowed brows.

"Nor is this problem one that concerns only the surplus 200,000. Until they are absorbed in other jobs, every coal miner in the land suffers with them. Wages in the coal fields cannot rise to decent levels as long as this reservoir of unemployed miners exists.

"What is true in the coal mining industry is true in a great many others. This 'technological unemployment,' about which we used to hear so much before the ordinary, depression-bred kind of unemployment became so common, has laid its hand on almost every

trade in America. It is a problem that will grow greater, and not smaller, in the future.

"And that is why government and industry, moving to combat unemployment, cannot simply base their campaign on a plan to restore prosperity. The problem is too complex for that. We need good times, to be sure, and no relief scheme that fails to restore them will be any good. But we need a good deal more than that, and it will be tragic if we don't get it.

"It is for that reason that the scheme for the shorter working week is so important. Unless we move to redistribute jobs on a wholesale basis, keeping wages up but making each bit of work go farther, our unemployment problem will never be solved. It will be a permanent thing; and with it we shall have a permanent dole."

MOVING PICTURES AND MINE SAFETY

THE BUREAU OF MINES recently announced that 397,799 miners have already been given personal instruction in first-aid measures by either Bureau personnel or through cooperative training through key men of operating companies" and that 100,000 miners are given this training annually. The Bureau believes that it is rapidly approaching the time when most of the miners will be trained safety-men and that the talking motion picture will be the best method to replace the present method of first-aid training. The Bureau recommends that \$100,000 be allotted to prepare and put into operation a series of 12 motion pictures on safety in mining, in order to show the workers the safe way to work. Whether they are right or not is not the question. Undoubtedly personal training of the men in safety practice may be effectively abetted through the motion picture, and the wonder is that this means has not been more universally adopted.

Miners are very human. They instinctively resent any paternalistic attitude or effort on the part of the operators and do not take kindly to the idea of being "educated." With or without the sum specified, the Bureau of Mines can be sponsor to a series of sound films so presented as to still further awaken in the miner's consciousness the needless waste in life and limb and property, which a disregard of the reasonable and ordinary every-day precaution entails. Moving picture theatres are available in nearly all mining towns and districts, and, in cooperation with the mining companies' safety committees, staff men and employes, the Bureau can make this splendid suggestion immediately available.

CONSIDER THE GOLD MINER

THE RISING TIDE of commodity prices has acted as a distinct check to gold production, which fell, in the course of a very few years, by more than 50 percent. The drop in commodity prices has encouraged gold miners, and the industry has responded with an increase in production, at a time when additional gold was of vital importance.

Gold production is vastly important to our welfare. It should be encouraged to every reasonable extent. The price is fixed at \$20.67 an ounce. A 10 percent rise in commodity prices will take out of production a material part of the gold now coming into our mints, and it is not misstating to say that a 30 percent increase in commodity prices will cause a cessation of 50 percent of our present gold production.

The policy of the United States toward the gold industry is quite different from other nations. Take Canada for example, where gold mining is fostered and encouraged by what seems to be a far-seeing government policy. It is ac-

corded equitable tax treatment, and at the present time the Canadian government has taken steps to insure that the producers of gold are afforded access to the world market, in the disposal of their product, at the best possible figure.

Those of our own citizens who are so enterprising as to risk the hazards of gold mining should receive full consideration, and are entitled to market their product at the best available world price. Perhaps something might be gained by studying the Canadian policy. Production of gold should be encouraged, not penalized.

COLOSSAL BURDENS OF TAXATION

WHEREVER TWO or more congregate these days the subject of taxation is a topic for discussion. The whole country seems to be tax conscious. A leading banker recently pointed out that the immediate and urgent problem of these United States is tax reduction; that when taxation reaches the point where it is used as a social measure to take an undue proportion of the property of a certain class to finance special benefits to certain other classes, it violates our basic principles. Many leading organizations are now making a study of taxation and its relation to cost of government; a number of special committees are devoting considerable time to a study of the subject, and reports may be expected from them this winter. Legislatures that will convene in 1933 have already given evidence that their principal item of discussion will be taxation. The recent convention of the American Bar Association discussed the "colossal burdens of taxation which now imperil our national safety."

We can not emphasize the need for tax reduction too forcibly. It should be repeated again and again, until it sinks into the consciousness of every voter; until there is general understanding as to why taxes are assessed, and for what the moneys collected are spent.

SUBMITTED AS EVIDENCE

PERHAPS no more striking illustration of the futility of Government control of business can be given than the effort of many years ago to reduce railroad charges for service because of the foolish theory that railroad income was based upon a return upon watered capital stock rather than upon the principle of "all the traffic will bear."

It was evident then, as now, that the market price of railroad stocks varied so greatly as to entirely reject the theory that railroad rates were so determined. As a result of these very costly investigations by the Interstate Commerce Commission as modified by the courts in the O'Fallon case, the railroads were entitled to a 50 percent increase in rates, which the "traffic would not bear." In the meantime, the newer competition of trucks and airplanes are taking from the railroads that which was then considered as certain income. The business life of the Nation could not be sustained with truck and airplane transportation. The railroads must be supported if our business life is to continue, and the many efforts which are now in progress looking to decreased freight rates to the extent of success will still further hamper that most important service. The American people realize that freight rates can not be largely decreased and that a decrease volume of freight must be met with decreased operating cost. Railroad wages must be reduced unless price levels are to be largely increased. High wages and low commodity prices can no more exist together than the Nation which Abraham Lincoln said could not endure permanently "half slave and half free."

MINING EVENTS

Gold

ON ACCOUNT of World Conditions gold has steadily monopolized the limelight. Strenuous efforts are being made to have included in the "Industry Bill" an appropriation for the financing of small gold properties, and grubstaking prospectors. Congressman Englebright, of California, has presented a bill seeking to permit the sale of newly-mined gold at world prices, instead of our standard \$20.67 an ounce.

ACCORDING to the *Wall Street Journal* Treasury officials are perplexed by requests from gold mining companies as to whether the gold embargo regulations prevent them from exporting gold concentrates for smelting abroad.

In the past, according to Commerce Department authorities, no gold concentrates have been exported, as gold mined in the United States could be smelted here cheaper than in foreign countries. Since this country abandoned the gold standard, however, the resultant premium on gold makes exports of the concentrates profitable in some instances. This is due to the fact that gold would command more dollars in the foreign exchange market than it would if brought to a United States mint.

GOLD PRODUCTION in the United States last year totaled \$51,836,000 compared with \$45,762,100 in 1931, according to the Bureau of Mines. Gold production in the United States from 1792 through 1931 has been about \$4,650,000,000. The highest yearly production was \$101,036,000, in 1915. Output has remained between \$52,000,000 and \$44,000,000 annually during the period 1921 to 1931, inclusive.

World production of gold from 1493 through 1931 has been approximately 1,085,000,000 ounces. For 1932 it was approximately 22,100,000 ounces. World production of silver from 1493 through 1931 has been approximately 15,300,000,000 ounces. It was approximately 160,000,000 ounces in 1932.

DATA RECENTLY COMPLETED by the Bureau of Mines indicate that 12,000 individuals in California in 1932 produced and sold to bullion buyers, to the mint, and to private refiners, 30,880 lots of new gold consisting of gold dust, nuggets, and amalgam. The value of the individual lots ranged from 9 cents to as much as \$100 in some instances. This new gold (23,870 fine ounces) amounted to \$493,437. The average value of each lot sold was \$16 and the average amount received by the prospectors for their labors during the season or the entire year was \$41.12.

Silver

PROSPECTS for something to be "done about silver" seem bright. These, as reported by the *Wall Street Journal*, include the following:

First, a plan for special arrangement controlling production between the United States and Mexico, the two main producers.

Second, a general accord calling for a six-point program which includes re-monetization and increased use of silver as a currency base.

At the same time a joint statement issued by President Roosevelt and T. V. Soong, Chinese representative, said that silver should be enhanced and stabilized.

A joint statement issued by President Roosevelt and the finance Minister of China said in part:

"We are in entire agreement that present unreasonable obstacles to international trade must

THEY TALK IN BILLIONS



—Detroit News

be removed and the present financial and monetary chaos must be replaced by order. In this connection we consider it essential that the price of silver, the great medium of exchange of the East, should be enhanced and stabilized. We are in the closest agreement as to many other measures which must be adopted for the rehabilitation of the economic life of China and of the world, and we both are resolved to approach the problems of the world economic conference, as well as the problems of the disarmament conference, with the determination necessary to bring their labors to success."

Senator Key Pittman in declaring that all countries so far participating in the preliminary economic discussions, here, have agreed in principle on plans for the rehabilitation of silver, outlined six points upon which accord has been reached. However, he pointed out that details would have to be worked out at London.

The six points were:

(1) The price of silver should be reasonably raised and stabilized at certain levels. (He would not set any figure.)

(2) It is part of a general problem of stabilization of currency in international exchange.

(3) Governments should agree to abandon policies and practices of debasing and melting up silver.

(4) The fineness of debased coins should be restored as fast as practicable.

(5) To such extent as possible, there should be larger use of silver as a base for currency issues.

(6) Tariff and other obstructions to the free movement of silver should be eliminated.

The Senator said the question of free coinage of silver had not been discussed.

The Mexican talks included plans for each country to limit the amount of silver it will produce for the international market. If either country should produce more than its quota, it would be required to keep it within its own borders and not to export any of the excess.

The power to enforce such an agreement, if it should be finally decided upon, would be put into the hands of President Roosevelt under the terms of the pending industrial recovery act which specifically covers natural resource industries.

There is hope that Canada will come into line with the thought of the representatives of Mexico and the United States. In fact it had been hoped that the three nations might join in some silver statement but this has been postponed.

SILVER PRODUCTION in this country from 1801 to 1927 was 2,996,000,000 ounces. Production in 1932 was 24,425,000 ounces, compared with 30,932,000 ounces in 1931. Production for the period 1928 to 1930 averaged 56,000,000 ounces.

Iron

THE FINAL FIGURES of the United States Bureau of Mines on 1932 iron ore production showed an actual decrease of 68 percent over 1931. In spite of this fact the Minnesota legislature adjourned without taking any action concerning iron ore taxation. Although drastic cuts were made in state appropriations, the tax on iron for state purposes is estimated at 10.98 mills, the highest in the history of the state, which would mean an increase of about six hundred million dollars. As a result some companies have already announced that the taxes will not be paid. According to press dispatches:

"The Republic Steel Corporation will withhold payment of \$92,424, the last half of the 1932 taxes, due October 31, to contest the validity of the tax valuation on its mineral properties.

"The Oliver Iron Mining Company, largest taxpayer in the state, announced that it would withhold

payment of about \$5,000,000, last half of its 1932 taxes.

"The mine properties will then be declared tax delinquent, marking the first step toward contesting what the companies claim is illegal and excessive valuation."

THE IRON ORE mined in the United States in 1932 amounted to 9,846,916 gross tons, a decrease of 68 percent compared with 1931. The production in 1932 was the lowest since 1885 and was 83 percent below the average for the preceding five years. Iron ore was produced at only 129 mines (and an undetermined number of small pits) in 10 states in 1932, compared with 186 mines (and an undetermined number of small pits) in 15 states in 1931. The shipments of iron ore in 1932 amounted to 5,331,201 gross tons, valued at \$12,898,011, a decrease of 81 percent in quantity and of 83 percent in total value, compared with 1931. The average value per ton of iron ore at the mines in 1932 was \$2.42 against \$2.60 in 1931. The stocks of iron ore at mines at the end of 1932 amounted to 17,603,873 gross tons, an increase of 35 percent. The stocks at the end of 1932 were about 7,642,000 tons above the average for the preceding five years. The stocks at the end of 1932 were the largest ever accumulated at the mines. The figures on production of iron ore in Alabama, Georgia, Missouri, New Jersey, New York, Washington, and Wisconsin were collected in cooperation with the State Geological Surveys and the figures for pig iron in Michigan were collected in cooperation with the Michigan Geological Survey.

Copper

CHEERING REPORTS are coming from several of the important metal producing industries, notably iron and copper. There is a greater note of optimism than at any time during the past three years. The President's National Industrial Recovery Bill seems to be the base of much of this optimism. The American Metal Market seems to feel that it is the cure-all of the copper industry's ills, and says:

"According to the proposed bill, the President would have far-reaching authority to encourage, promote and require organization within private industry for better control of production and elimination of unfair competitive practices which powers, if and when applied to copper, should lay the groundwork for rehabilitation of the industry. The difficulty at present is the divergent views held within the industry in respect to embracing drastic curtailment or a complete shutdown but with Government cooperation, means should readily become apparent to overcome the snags which have thus far interfered with effective control not only of output but of present stocks. Many in the trade feel that with agreement of domestic interests on these phases of the domestic market that a supplementary agreement could subsequently be reached with foreign producers whereby better control than at present might be exercised over principal world markets." Presi-

dent Roosevelt's request of Congress to enact legislation that would render the anti-trust laws inoperative in the interest of industrial cooperation, also gave fresh encouragement to the copper market.

PRODUCTION OF COPPER in the United States in 1932 was substantially below that in 1931, smelter output from domestic sources decreasing 48 percent and refinery primary production from domestic and foreign sources declining 55 percent. The average price of copper delivered during the year was

"HEY, MA, LOOK!
IT'S COMING UP!!!"



—New York Times

6.3 cents a pound, the lowest on record, and was 31 percent below that in 1931. As a result the value of smelter production decreased 64 percent. The consumption of copper in the United States showed another large decrease in 1932, withdrawals from total supply on domestic account declining 42 percent from those in 1931. The efforts of producers to bring production into line with consumption were more successful in 1932 than in 1931 or 1930 and total stocks of blister and refined copper (exclusive of consumers' stocks) increased only 9 percent, compared with increases of 19 percent and 32 percent in 1931 and 1930, respectively.

A tariff of 4 cents a pound was put into effect on June 21, 1932, and contributed to the decrease of 33 percent in imports in 1932. Exports of metallic copper decreased 47 percent, however, and were again smaller than imports. For many years prior to 1930 exports exceeded imports, but they were lower than imports in 1930, 1931, and 1932.

THE SMELTER PRODUCTION of primary copper from domestic sources during 1932 amounted to 544,009,948 pounds, a decrease of approximately 48 percent. The value of smelter production decreased approximately 64 percent in 1932. The average price of copper delivered during the year, as reported to the Bureau of Mines by selling agencies, was 6.3 cents a pound, f. o. b.

refinery. The total production of new refined copper in 1932 was 681,000,000 pounds, a decrease of 820,000,000 pounds from that in 1931.

Lead

THE OUTPUT of refined primary lead in the United States, from domestic ore, in 1932, amounted to 255,337 short tons, valued at \$15,320,000, compared with 390,260 tons, valued at \$28,879,000, in 1931, a decrease of 35 percent in quantity and of 47 percent in value. The production of refined lead from foreign sources, principally from Mexico, Newfoundland, Sweden, and Canada, amounted to 33,024 short tons—a decrease of 37 percent from the production in 1931. The decrease in the total output of primary lead from domestic and foreign sources was 35 percent compared with 1931. About 31 percent of the lead produced from domestic ore was derived from Missouri, 27 percent from Utah, and nearly 27 percent from Idaho. The amounts produced by these states in 1931 represented 38 percent, 19 percent, and 26 percent of the domestic total, respectively. The quantity of refined primary lead available for consumption in the United States in 1932 amounted to about 258,000 short tons, compared with about 411,000 short tons in 1931—a decline of 37 percent. Antimonial lead produced at primary smelters in 1932 totaled 21,024 tons, containing approximately 3,577 tons of primary domestic lead, 1,466 tons of primary foreign lead, 878 tons of primary domestic antimony, 207 tons of primary foreign antimony, 13,486 tons of secondary lead and 1,410 tons of secondary antimony.

Zinc

THE OUTPUT of rolled zinc in 1932 amounted to 95,594,938 pounds, compared with 116,669,925 pounds in 1931, a decrease of 18 percent. The output in 1932 was composed of 70,104,746 pounds of strip and ribbon zinc, 24,581,367 pounds of sheet zinc (not over 1/10 in. thick), and 908,825 pounds of boiler plate (over 1/10 in. thick). The output in 1931 was made up of 84,641,678 pounds of strip and ribbon zinc, 30,935,389 pounds of sheet zinc, and 1,092,858 pounds of boiler plate. Sheet zinc imported for consumption amounted to 77,352 pounds, compared with 39,352 pounds in 1931, and rolled zinc exported totaled 6,019,774 pounds, compared with 5,518,392 pounds in 1931. Of the slab zinc used in the manufacture of rolled zinc in 1932, 79,000,000 pounds was made up as follows: Brass special, 55 percent; prime western, 18 percent; high-grade spelter, 14 percent; electrolytic, 10 percent; and intermediate, 3 percent.

Bituminous

THE HIGHEST SPOT in the coal industry for May was the tenth annual meeting of Practical Coal Operating Men, held under the auspices of the Coal Division, The American Mining Congress, May 8-12, inclusive, at Pittsburgh, Pa., to which some 3,500 delegates came. It was splendid evidence that the industry is working together, and that it means to solve its production problems.

ANOTHER SPOT of tremendous interest was the action of the Illinois Coal Operators, in conjunction with operators from Indiana, who spent several days in Washington, in conference with Government officials including Secretary of the Interior Ickes, in an effort to secure some action by the Government which would be favorable to these operators. Among those attending the conferences were: George Reed, Peabody Coal Company; W. J. Jenkins, Consolidated Coal of St. Louis, and president, the Illinois Coal Operators Association; George B. Harrington, Chicago, Wilmington, and Franklin Coal Company; Paul Weir, Bell & Zoller Coal and Mining Company; R. H. Sherwood, Central Coal Company of Indiana; F. S. Pfahler, Superior Coal Company, and Harvey Cartwright, Commissioner of the Indiana Coal Operators Association. Previously, a group of Western Pennsylvania coal operators had been in Washington on a similar purpose. These were, C. F. Hosford, Butler Consolidated Coal Company; A. R. Budd, Hillman Coal & Coke Company, and W. M. Henderson, Henderson Coal Company. They all largely favored the provisions of the Hayden-Lewis coal control bill, now before Congress.

COUNTERING THIS ACTIVITY was the reverse side, which is seeking to work out coal's problems without the Government's supervision and aid. Appalachians Coals, Inc., and similar organizations have been thriving. One hundred thirty-seven companies have joined the original group, and Ohio, central Pennsylvania, and western Kentucky are perfecting their organizations. Western Pennsylvania operators held a meeting to consider the feasibility of adopting this method of solving their problems. These agencies are known as "Northern Ohio Coals, Inc.," "Eastern Coals, Inc.," and "Northern West Virginia Coal Sales, Inc." The leaders in each respective field, whether it be for Government control of the coal industry, or the development of the Sales Control method, are behind the recommendations and are actively pushing their special plan.

ACCORDING TO a report by the Bureau of Mines:

"The soft coal industry was most seriously affected by the month's (March) developments. From a total of 6,081,000 tons for the week ending February 25, the output of bituminous coal dropped to 5,270,000 tons for the following week. Subnormal temperatures in the eastern part of the country stimulated demand to some extent during the second week in March, and production rose to 5,518,000 tons; but with the return of normal weather output again subsided. During the remaining weeks of the month production of soft coal averaged less than 900,000 tons per working day. For the month as a whole the total production of bituminous coal amounted to 23,704,000 tons, or an average of 878,000 tons per day. In comparison with the daily rate prevailing in the previous month, this is a decrease of about 23 percent. The March production brings the total output for the coal year 1932-33 to 295,410,000 tons,

a decrease of 19 percent in comparison with the year preceding."

Anthracite

GENERAL BRICE P. DISQUE, president of the Anthracite Institute, appeared before the House Committee on Labor early in May against the Black 30-Hour Week Bill. He suggested the "balancing of production with consumption, and maintenance of proper standards of employment through voluntary industrial boards cooperating with the Federal Government" and endorsed the Trade-Association plan for arriving at agreements within industry.

ROOSEVELT—"When the Storm Subsides We'll Come Back to the Car!"



—New York Times

General Disque told the committee that it could increase employment in the anthracite industry by stopping the importation of Russian, British, Scotch, German, Indo-China, and other foreign anthracite. Inasmuch as the Anthracite Institute represents more than 90 percent of the capacity and production of American anthracite, General Disque obviously was speaking for virtually the entire anthracite industry. He strongly favored the application to imports of the same form of control as to hours and wages as those applying to domestic production.

His proposed plan to balance production with consumption through voluntary industrial boards cooperating with the Government, General Disque pointed out, would afford opportunity for active cooperation on the part of American industry. In turn, he said, it would be sufficiently flexible to meet the varied problems of each industry without unduly increasing the cost of production.

"Those industries which did not cooperate and those members of any industry which did not voluntarily elect to participate in such forms of industrial government would be bound by the alternatives clause of the bill," said General Disque. "Thus pressure would be brought to bear by the provisions of the bill upon non-conformists to join with the best elements of the industry in establishing sound practices by voluntary cooperation."

This alternative feature has been retained by the revised administration draft and strongly supported by most industrial organizations throughout the country. General Disque asked also that provisions of the bill should apply both to intrastate and international commerce as well as to interstate commerce.

"With us you have a great industry that has been unable to compete with substitute fuels for several years," he continued. "We had a production of 80,000,000 net tons in 1924, and only 45,000,000 tons in 1932, a loss of 35,000,000 tons or 44 percent.

"The depression has had something to do with all that but let me say that the decline started in 1926 and has continued at an accelerated rate until today.

"The major cause has been excessively high costs. They are absurdly out of line with every other industry of which there is record. The industry is making a gallant fight to save its life." Passage of the bill, he said, would increase costs at a time when they must be reduced radically if the industry is to survive and any employment be provided. No increase in cost, he said, can be passed on to the public. The industry, it was declared, requires the same kind of treatment that the President gave to the Federal Government. There has to be a balancing of the income with expense, it was asserted.

"Our wage rates are notoriously high and until they come down unemployment will increase," continued General Disque. "We are in competition with fuels which are on a lower wage basis. This bill, designed to prevent unfair lowering of labor standards, is inapplicable to us, as our industry is suffering from impracticable inflation of labor standards."

THE ANTHRACITE INSTITUTE states that:

"As a result of the adjournment of the anthracite wage conference, at the request of Miss Frances Perkins, Secretary of Labor, without reaching any agreement for a reduction of wage rates at the mines, prices as announced by the large producers, effective May 1, are substantially at the same levels or below those existing one year ago. Producers and retailers have voiced disappointment at the failure of the wage conference to secure any reduction in wage rates in the anthracite region where wages have remained constant since 1923 when the last previous general increase occurred."

"Hopes for coal freight reductions are also fading, in the light of announcements of governmental plans for rehabilitation of the railroads. Proposals for revision of monetary standards tending to inflation, coupled with proposals for a limitation in hours of labor in industry, certainly indicate a prospect of advance in commodity prices. The custom which has heretofore prevailed in hard coal, permitting fairly definite price schedules to be known in advance for each so-called coal year, can

not be maintained in the face of the existing national uncertainties.

"While no commitments can be made in respect to the prospects for the future, it is generally believed that the new prices are the lowest prices to be reasonably anticipated."

ACCORDING TO press reports, Secretary of Labor Frances Perkins will announce within the next two weeks a solution of the anthracite industry's wage problems. Secretary Perkins is known to have devoted some time to a consideration of problems of the anthracite business, although she was prevented from going into the matter thoroughly because she has been engaged almost exclusively on the public works, industry control and employment service projects.

Secretary Perkins a month ago suggested a 30-day recess of the Philadelphia joint conference on a wage cut, because of the Roosevelt inflation program.

■ ■ ■

ON AND AFTER May 1, 1933, the Philadelphia offices of the Anthracite Institute, Anthracite Service, Anthracite Bureau of Information, heretofore located on the eighth floor, Lewis Tower, will be located at Primos, Delaware County, Pa., in the building now occupied by the Anthracite Institute laboratory.

■ ■ ■

APPALACHIAN COALS, INC., has suggested to its producer-members and sub-agents the insertion of a clause in sales contracts with consumers specifying that the contract price is based upon the present cost of producing and selling coal, and is, therefore, subject to any change in the present wage scale. Legislative proposals which might affect their wage rates or labor costs are evidently the basis for such suggestions.

■ ■ ■

OVER 100 western Pennsylvania coal operators gathered in Pittsburgh on May 2 for a discussion of a plan for a regional sales agency for producers of bituminous coal in western Pennsylvania. A resolution was unanimously adopted that provided for the employment of a committee of three engineers—namely, S. A. Taylor, Ben Hoffacker, and John Rayburn—to develop a plan that would be suited to that field and present it at a later meeting of the entire group. Sentiment was unanimous at the meeting in favor of the sales agency idea which was clearly and forcefully outlined by E. L. Greever, of counsel in the test suit of Appalachian Coals, Inc. Executive Secretary Huntress, of the National Coal Association, presided at the meeting, and among those who expressed approval of the plan were: John C. Cosgrove, president of the Cosgrove-Meehan Coal Co. and the West Virginia Coal & Coke Corporation; George S. Love, president of the Bessemer Coal & Coke Co., and vice president of the Union Collieries Co.; J. D. A. Morrow, president of the Pittsburgh Coal Co.; J. T. M. Stonerod, president of the Carnegie Coal Corporation; and C. S. B. Ward, of Pittsburgh.

A meeting was held last Monday in Cincinnati of between four and five hundred sales executives and salesmen under

the auspices of Appalachian Coals, Inc. They came there from Iowa and the Carolinas; the entire marketing area was represented, and on all sides enthusiasm at the efficient functioning of the sales agency plan was expressed. J. D. Francis, the president of the Corporation, presided, and talks were made by C. E. Bockus, a director of Appalachian Coals, Inc.; E. L. Greever; and George Cushing.

A meeting was held in New York last week of the organization committee for a regional sales agency for the Smokeless field of West Virginia. T. B. Davis, chairman of the committee, presided. The committee reported 100 percent of the organization of an agency for that field. This report will be submitted to all operators in the Smokeless field at a meeting to be held at an early date.

■ ■ ■

A MEETING of the Smokeless Coal Operators of West Virginia was held at White Sulphur Springs, W. Va., on May 23, to consider ways and means for developing a plan for the smokeless field to affiliate with the Appalachian Coals, Inc.

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THE COAL AND COKE Department of the American Rolling Mill Company has been discontinued. A separate corporation known as the Nellis Coal Corporation has been organized, to take over the Nellis mining properties. Officials of the new company are: J. C. Miller, president, Ashland, Ky.; Fred Legg, vice president, Cincinnati, Ohio; and R. L. Richardson, treasurer, Ashland, Ky. Charles W. Connor has been elected to the board of directors of the new corporation and will continue to manage the Nellis properties.

■ ■ ■

THE DAVIS COAL AND COKE CO., Baltimore, Md., announces the appointment of E. S. Nicoll as sales agent in charge of its Philadelphia office in the Land Title Building. Mr. Nicoll has been a member of the Davis sales organization for the past four years and succeeds N. W. Garrett, who has been assigned to other duties.

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THE PRODUCTION of carbon black during 1932 amounted to 242,700,000 lbs., a decline of 38,207,000 lbs., or 14 percent, from 1931. This was the second successive year in which production has decreased.

Although the export market for carbon black has expanded rapidly in recent years while sales in the country have declined, the distribution to domestic consumers is still the most important element in demand. In 1932 total domestic sales were 161,483,000 lbs., or only 229,000 lbs. below the 1931 total. Exports in 1932 were 100,072,000 lbs., or 3 percent higher than in 1931.

■ ■ ■

NOTICE of an appeal has been filed in the U. S. District Court at Baltimore by the Electro-Metallurgical Company of New York, a wholly owned subsidiary of Union Carbide & Carbon Corporation, and the American Stainless Steel Company of Pittsburgh, a patent-holding pool, in their infringement suit

against the Rustless Iron Corporation of America, a Baltimore concern.

Judge William C. Coleman in the U. S. District Court handed down a decision March 1 last, favoring the Rustless Iron Corporation.

The Electro-Metallurgical Company charged infringement of the Clement patent, a product claim, and of the Hamilton-Evans patent, a process claim.

■ ■ ■

Mining Accidents in 1932

ACCIDENT REPORTS for 1932 received by the United States Bureau of Mines during the first quarter of 1933 and which cover a fair proportion but not all of the properties that were active last year, indicate reductions in the accident frequency rates for anthracite and bituminous-coal mines and non-metal mines, a slight increase in the rate for metal mines, and substantially no change in the rates for mills and smelters and for stone quarries.

The number of fatal and nonfatal lost-time injuries per million man-hours of exposure to occupational hazards was 29.69 for the quarrying industry, according to reports which have thus far been received. This rate compares with a rate of 30.10 for the same plants in 1931 and 41.04 for the entire quarrying industry during that year. The accident rate for bituminous coal mines was 88.24 per million man-hours in 1932 and 108.01 for the same mines in 1931 and 92.38 for all bituminous mines in 1931. Anthracite mines had a rate of 106.82 while the same plants in 1931 had a rate of 120.89 and all anthracite mines had a rate of 128.38. Nonmetal mines reported a rate of 40.44 as against 41.77 for the same plants and 47.49 for all plants in the preceding year. The rate for identical metal mines was 50.75 in 1932 and 48.24 in 1931, as compared with 57.98 for all metal mines in 1931. Ore-dressing plants and smelters (not including the steel industry) reported a rate of 15.40 in 1932 and 15.49 in 1931 for identical plants active in both years, and 20.15 for all plants that were active in 1931.

Figures covering identical plants as shown by reports thus far compiled, indicate a decline of 17 percent in the total number of man-hours of exposure or employment at anthracite mines, 17 percent at bituminous coal mines, 38 percent at metal mines, 34 percent at nonmetal mines, 28 percent at quarries, and 32 percent at mills and smelters.

■ ■ ■

THE PRODUCTION of molybdenum ore in 1932 amounted to 363,400 short tons, which yielded 2,616 short tons of concentrates carrying an average of 85.21 percent or 4,458,000 lbs. of molybdenum sulphide (MoS_2), equivalent to 2,675,000 lbs. of metallic molybdenum. In 1931 the production was 434,400 tons of ore which yielded 3,038 tons of concentrates carrying an average of 85.93 percent or 5,221,000 lbs. of molybdenum sulphide, equivalent to 3,132,700 lbs. of metallic molybdenum. The shipments of concentrates from mines in 1932 contained an equivalent of 2,616,700 lbs. of metallic molybdenum having an estimated value of \$1,308,000, compared with shipments in 1931 of 3,157,000 lbs. of molybdenum, valued at \$1,577,000.

(Continued on page 33)

LEGISLATION

SOMETIMES AGO we made the following statement concerning Legislative Washington:

"So Washington goes on . . . conducting investigations . . . compiling statistics . . . helping and hindering industry . . . wheels within wheels . . . all conspiring to transact the business of a giant nation . . . Washington, the great political arena; the storehouse of fabulous information; the cradle of undreamed of industry . . . fascinating, sometimes mysterious, busy, gay, and at all times intensely interesting."

During the past month the accuracy of that statement has been demonstrated. The legislative caldron has boiled furiously, but no less effectively. The Government departments have been in a whirl of activity; the congressional committees have completed one investigation, only to immediately embark upon another. The steady procession of bills from the White House have continued to receive congressional endorsement. Industry has kept one delegation after another en route to Washington. For no one seems to be able to gather just where we are bound for, although the universal opinion is that we are on our way.

No better picture of what has been happening here can be given than through the newspaper headlines. Those relating to mining are interesting: "America Quits the Gold Standard" . . . "Government Costs Cut to the Bone" . . . "Wages and Production to be Regulated" . . . "Director of Budget's Plan for a Balanced Budget Presented" . . . "The Securities Bill Passes House" . . . "National Industrial Recovery Bill Proposed" . . . "Mine Assessment Suspension Bill Passed" . . . "Roosevelt Asks that Anti-Trust Laws be Suspended" . . . "Coal Operators Endorse Coal Control Bill" . . . "The 30-Hour Week Bill Before Congressional Committees" . . . "Electrical Energy Tax Proposed on Industrial Power" . . . and many, many more, which may either help or hinder the mining industry.

THE NATIONAL Industrial Recovery Bill holds the center of attention in the legislative program and is now in the form of H. R. 5755, as reported from the Ways and Means Committee on May 23.

Through the act power is vested in the President to "establish such agencies, to accept and utilize such voluntary and uncompensated services, to appoint, without regard to the provisions of the civil

service laws, such officers and employees, and to utilize such Federal officers and employees, and, with the consent of the state, such state and local officers and employees, as he may find necessary." Provision is made for the setting up of "CODES OF FAIR COMPETITION" wherein trades or industries, or subdivisions thereof, may work together in the development of fair practices to the end that the harmful competitive practices of today may be remedied.

An appropriation of \$3,300,000,000 is embodied, through the expenditure of which on public works and construction projects it is intended that the impetus be given which will develop purchasing power and place the country on the way to a resumption of normal activities.

The new revenue features embodied in the bill under the caption "REEMPLOYMENT AND RELIEF TAX," provide for increase in the income tax rates, for taxes on the previously tax free dividends (a form of double taxation) and for an increase in the gasoline tax to 1½ cents per gallon.

At the hearings conducted on the National Industrial Recovery Act before the Ways and Means Committee there was much talk of a manufacturers excise or general sales tax. President Wm. Green, of the American Federation of Labor, stated that if two small amendments which he had requested were added to the labor provisions of the act he felt sure organized labor would not object to a general sales tax. It is of particular interest to note the amendments suggested by President William Green which were accepted by the Ways and Means Committee and are now embodied in H. R. 5755. Under Title 1, Section 7(a) the bill now reads as follows:

"Every code of fair competition, agreement, and license approved, prescribed, or issued under this title shall contain the following conditions: (1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organizations or in other concerted activities for the purpose of collective bargaining or other mutual aid or pro-

tection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any *company union* or to refrain from joining a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other working conditions, approved or prescribed by the President.

(b) "The President shall, so far as practicable, afford every opportunity to employers and employees in any trade or industry or subdivision thereof with respect to which the conditions referred to in clauses (1) and (2) of subsection (a) prevail, to establish by mutual agreement, the standards as to the maximum hours of labor, minimum rates of pay, and such other working conditions as may be necessary in such trade or industry or subdivision thereof to effectuate the policy of this title; and the standards established in such agreements, when approved by the President, shall have the same effect as a code of fair competition, approved by the President under subsection (a) of section 3."

The italicizing indicates the amendments as now embodied in H. R. 5755, and it is worth while noting that in order to get this amendment into the bill labor announced itself as ready to accept a general sales tax.

THE OIL BILL, H. R. 5720, proposed by Representative Marland, of Oklahoma, is the result of a long series of conferences on the part of the oil industry and heads up in the Department of the Interior under the Secretary. The bill provides for the stabilization of the industry through production control and guards against the exercise of unfair practices. Section 9 of the bill reads as follows:

"All crude petroleum or products of such petroleum produced in excess of the market demand as determined by the Secretary of the Interior shall be subject to a tax of 50 cents a barrel, in addition to any other tax imposed by law upon the production thereof."



Section 12 provides levies for carrying out the provisions of the act to the extent of one-fourth of 1 cent on each barrel of crude petroleum produced in or imported into the United States. As no hearings have been set for this bill before the Ways and Means Committee it is possible that it may be offered as an amendment to the National Industrial Recovery Act.

SUSPENSION of Annual Assessment Work on Mining Claims, S. 7, introduced by Senator Borah, of Idaho, after passing the Senate was reported by the Mines and Mining Committee of the House on May 8, thereafter being passed by the House with the inclusion of the Hayden amendment. The bill was signed by the President on the 18th of May, and provides for the suspension of assessment work on all mining claims in the United States, including Alaska, during the year ending at 12 o'clock Meridian, July 1, 1933.

The Hayden amendment provides that the provisions of the act shall not apply in the case of any claimant not entitled to exemption from the payment of a Federal income tax for the fiscal year 1932. There is a further provision that every claimant of any such mining claim, in order to obtain the benefits of this act, shall file or cause to be filed in the office where the location notice or certificate is registered, on or before 12 o'clock Meridian, July 1, 1933, a notice of his desire to hold said mining claim under this act, which notice shall state that the claimant, or claimants, were entitled to exemption from the payment of a Federal income tax for the taxable year 1932.

Securities Bill

THE HOUSE of Representatives adopted the conference report on the "Truth in Securities Bill," and the bill has been passed by the Senate, and is now awaiting the President's signature. The conference committee struck out the House provision prohibiting the selling of securities in interstate commerce in any state or territory where such sale would have been a violation of the laws thereof relating to the sale of securities if it has taken place wholly within the state or territory, which proposal brought a storm of protest from the mining industry.

ON MAY 13, the President signed the "Inflation" bill, which creates the Farm Credit Administration, which will dispense some two hundred millions for the relief of the farm industries.

Electrical Energy Tax on Industrial Power

AMENDMENTS to H. R. 5040, an act to extend the gasoline tax for one year, to modify postage rates on mailed matter and for other purposes, reads in part as follows:

Sec. 615½. Tax on Electrical Energy for Domestic or Commercial Consumption

"(a) There is hereby imposed upon electrical energy sold on or after September 1, 1933, for domestic or commercial consumption and not for resale a tax equivalent to 2 percentum of the price for which so sold, to be paid by the vendor under such rules and regu-

lations as the Commissioner, with the approval of the Secretary, shall prescribe.

"(b) Section 616 (a) of the Revenue Act of 1932 is amended to read as follows:

"(a) There is hereby imposed a tax equivalent to 1 percentum of the amount paid for electrical energy for consumption other than domestic or commercial and not for resale furnished on or after September 1, 1933, and before July 1, 1934, to be paid by the person paying for such electrical energy and to be collected by the vendor."

There is a further amendment by Senator Connally, of Texas, which was accepted in the bill on May 11 and which reads as follows:

"If any person manufactures, produces, or imports such electrical energy and uses it to the extent of more than 500 kilowatt-hours per month, he shall be liable for the tax under this subsection in the same manner as if such electrical energy were purchased by him, and the tax shall be computed on the price at which such electrical energy is sold in the ordinary course of trade, as determined by the Commissioner."

LAST YEAR the American Mining Congress appeared against the effort to place a 3 percent or greater tax on electrical energy used in industry, and that the regulations under "SCOPE OF TAX" state, "All electrical energy for industrial consumption includes that used generally for industrial purposes, that is, in manufacturing, processing, mining, refining, irrigation, ship building, building construction, etc., and by public utilities, water works, telephone, telegraph, and radio companies, railroads, and other common carriers."

The American Mining Congress, on April 28, appeared before the House Labor Committee to present the views of the mining industry in relation to the proposed "30-Hour Bill," and said in part:

"In the difficult times of the present and for the past three years, the mines of the United States producing gold, lead, copper, zinc, silver, coal, and other metals and minerals, have put into effect 'a spread of the work movement' in an effort to keep employed the men resident in communities which depend upon mining, milling, smelting, refining, necessary transportation and other attendant activities. At the present time throughout the West where, in many sections, mining represents the sole means of livelihood, mines are being kept in operation at definite loss in order that the employees and their families may be carried through in the hope of a better business status. In the outlying mining communities, the major portion of the tax burden is borne by the mining company and the burden of relief measures for whole communities necessarily falls upon them. The work has been spread to extremes, in one particular instance, a large operation furnishes

one week's work each month to each man, the production of the property being held to the minimum by the market conditions now prevailing. There are scarcely any properties which are at the present time on more than half time basis and the owners and operating staff have taxed their ingenuity to the uttermost in the effort to hold over and to do what is possible to provide employees with bare means of living. This is not only true of the mines of the West, but also extends throughout the Eastern areas where the mining of coal is particularly in evidence.

"The proposed limited working hours of the bill, wherein the 6-hour day and the 30-hour week are contemplated, are particularly disturbing to mining, smelting and attendant industries when those charged with the responsibilities of management contemplate the difficulties which will be attendant upon the state of disorganization in operation which will inevitably follow. In concentrating and smelting, the six-hour shift will be almost in operation an impossibility because six hours is not sufficient to complete the daily cycle of operations developed so as to permit of small scale and other operations being continued with reasonable efficiency.

"Gold mining is acutely affected by the proposed legislation. The gold mining industry is unique in that the selling price of its product is fixed by law. Hence, any increase in its costs cannot be reflected in an increased selling price.

"The production control feature of the contemplated amendments to the Black bill is felt by the mining industry to be a venture into a field which should and could be best handled by trade associations within the industry. Mining with the attendant milling, smelting and refining, is so varied when the numerous metals and minerals involved are considered, that each one of these presents a vast problem of its own. Take for example, the coal industry wherein for the past 40 years great effort has been put forth to develop to a proper stage the much needed stabilization or the measurement of production to demand.

"The minimum wage amendment to the proposed Black bill together with its wage boards when applied to the mining industry will be fraught with endless disorganization and difficulty in its administration.

"When the setup and functioning of the hours of work boards and of the wage boards contemplated in the Black bill and the amendments under consideration are considered from a nationwide viewpoint and from the experience of those familiar for example with the conduct of labor affairs in the organized coal fields of the United States the magnitude of the problem of administration, application and checkup is overwhelming.

(Continued on page 29)

ASSOCIATION ACTIVITIES

The Tenth Annual A.M.C. Coal Convention

THE GREATEST Coal Convention since 1929—some 2,700 practical coal operators representing 463 different companies; about 800 manufacturers representing 78 exhibitors of mining machinery and equipment; key-pitch interest and a note of optimism that has long been lacking—interest to the point where many Pittsburgh companies gave their men a day's leave to attend the sessions—interest packed with the youthful spirit of 108 seniors from the mining schools of the Pittsburgh District—co-operation and again the spirit of the “shoulder to the wheel”—that was the Tenth Annual Convention of the Coal Division of the American Mining Congress, held at Pittsburgh the week of May 8.

THE ATTENDANCE was so large that it surprised even the Mining Congress! A great army of coal leaders and workers, from presidents to the men at the face, came to Pittsburgh with a new-found courage which said, “We can't be licked!” Registrations began three days before the convention officially opened and attempts were made to register two days after its conclusion. Aside from the prevalent optimism, the most outstanding feature was that of the co-operation of all the companies. Never before has a greater desire been shown—never before so tight a handclasp! With the realization that there can be no hope for the coal industry unless they do co-operate, leaders wholeheartedly fell in line.

FROM THE OPENING session of Monday afternoon to the closing hour, 4 p. m. Thursday, the meeting room was crowded with interested men. The average attendance at each session was approximately 500—the seating capacity of the room. Many times during the sessions the “standing-room-only” sign had to be pulled down, because there was no room left even to stand.

“THE COAL INDUSTRY is like the textile industry, the automobile industry, and every other industry,” it was said. “We can no longer have wholesale price cutting. The farmer who owns a surface coal bed should not be allowed to dig out a few wagon loads and sell them at his nearest market for the best price he can get. We must pull together—plan together—fight together!”

THIS SPIRIT of optimism and courage was partially due to the splendid program, developed under the supervision of L. N. Thomas, vice president, the Carbon Fuel Co., which included all the major production problems of the industry. The chairmen of the sessions saw to it that every possible angle of the questions discussed was dealt with, and



Dr. L. E. Young
Chairman
Committee on Arrangements

splendid co-operation resulted. The problems of What to Do with the Surplus Miners, Housing Questions, Budget Control of Operations, Necessity for Discipline, Research, and Safety, were discussed, as well as the more technical questions of Standardization, Mechaniza-

NEW OFFICIALS MANUFACTURERS SECTION COAL DIVISION—THE AMERICAN MINING CONGRESS

JOHN T. RYAN,
Chairman
Vice President, Mine Safety Appliances
Company, Pittsburgh, Pa.

GEORGE R. DELAMATER,
First Vice Chairman
The W. S. Tyler Company,
Cleveland, Ohio.

C. B. OFFICER,
Second Vice Chairman
Sullivan Machinery Company,
Chicago, Ill.

BRUCE G. SHOTTON,
Third Vice Chairman
Hendrick Manufacturing Company,
Carbondale, Pa.

tion, Power, New Equipment, Explosives, Mine Cars, Preparation and Washing, Cleaning, and Screen Sizes.

AMONG THE MANY optimistic statements coming from prominent operators was that of J. B. Warriner, president, the American Mining Congress, and president, the Lehigh Navigation Coal Company, in discussing “Old King Coal” as slowly solving his own problems. “By economies, by searching and adopting new devices and new methods, not only in operation but in selling, we are moving to ultimate success,” he said. “The problem of what to do with the 200,000 ‘permanent surplus’ of coal miners and their half million dependents, economically helpless because of mechanization and other causes, is too big for any single agency or group to solve, and must be passed on to the Federal Government.”

R. L. IRELAND, JR., chairman of the Coal Division, and vice president of the Hanna Coal Company, in speaking of “The New Deal” said: “Today is the day of New Deals. The coal industry is awake as never before trying to figure out what its new deal will look like. Part of its new deal may come from without, but certainly most of it must come from within.”

IN THE STATEMENTS made at the luncheon on Monday, which officially opened the convention, Mr. Ireland said: “Last night the President told us that we were supposed to help ourselves. We're on the spot, and what are we going to do about it? I'm glad to see so many executives and salesmen present. It is they and not the operating men who have lagged behind. These annual conventions prove that the operating men have been on their toes, taking advantage of every opportunity to reduce their costs and improve their product. What is lacking in the coal industry is better salesmanship on the part of the salesmen and cooperation, as between companies, on the part of the executives.”

RALPH C. BECKER, chairman of the Manufacturer's Section, and vice president of the McGraw-Hill Company, also spoke at the luncheon. “Chiseling or cutting prices—that is, selling below cost—is our greatest problem to overcome, both in selling coal and in selling machinery,” he said. “From my experience in calling on many manufacturers in recent years, I have found many of them feel that the coal industry has been guilty of chiseling. Whether you sell coal or whether you sell machinery, you have a perfect right to expect to sell at a fair margin of profit. If you are one of those that have been forcing manufacturers to cut their prices, certainly you can not expect the manufacturer to do any different when it comes to buying your coal and to make you cut your price. Gentlemen, this is an individual matter for each individual company; by setting the example of buying and selling and seeing that it is done so by a fair margin of profit. Nothing will help us build up quicker and get out of this depression than each individual company determining on the policy that they will cut out chiseling prices.”



P. C. Thomas



Thos. G. Fear



M. D. Cooper



John T. Ryan



Mark Egan



John Andrews, Jr.



K. F. Treschow

THE SUCCESS of the convention in bringing new ideas and plans before the delegates was entirely due to the splendid group of papers developed by the Program Committee under the supervision of its chairman, L. N. Thomas, vice president, the Carbon Fuel Co., and the following district chairmen: Western Pennsylvania-Northern West Virginia-Ohio District, J. William Wetter, vice

president and general manager, Madeira-Hill Coal Mining Co.; Illinois-Indiana District, C. J. Sandoe, vice president, West Virginia Coal Co. of Missouri; Southern West Virginia District, H. B. Husband, general manager of coal mining, Chesapeake & Ohio Railway Co.; Virginia-Kentucky-Tennessee District, Harry LaViers, general manager, the North-East Coal Co.; West Central District, L. R. Kelce, Sinclair Coal Co.; Far West District, Gomer Reese, general superintendent, the Kemmerer Coal Co.; Anthracite District, A. B. Jessup, vice president, the Jedd-Highland Coal Co., in cooperation with 56 committee members—each a coal operator of wide experience.

THE CONVENTION officially opened on Monday, May 8, with a luncheon in honor of the chairman, L. N. Thomas; R. L. Ireland, Jr., chairman of the Coal Division of the American Mining Congress; and Ralph C. Becker, chairman of the Manufacturer's section. C. J. Ramsburg, vice president, Koppers Co., and a director of the American Mining Congress, presided at this luncheon. The first session began immediately following the luncheon, with the following papers being presented: Budget Control of Operation; Roof Control Problems; Possible Results of Standardized Mine Timbers; Lubricating Costs; Prevention

of Personal Injuries in Mine Operation; Use of the Shaking Conveyor in Anthracite Mining; and the Importance of Analysis of Screen Sizes. An informal reception was given at the William Penn Hotel in the evening. W. L. Robison, president, the Youghiogheny and Ohio Coal Co., presided over the opening session.

THE CHAIRMAN for the morning session of Tuesday was R. H. Morris, general manager, the Gauley Mountain Coal Co. Five papers were delivered: Competitive Fuels; Drying Washed Coals; Dedusting; The Coal Saw; and Better Machine Bits. Papers for the afternoon session, chaired by James A. Long, general manager, the Woodward Iron Co., included: Safety and Efficiency in Blasting; New Things for Anthracite; Main Line Haulage; Does Minus 48 Mesh Coal in By-Product Ovens Affect the Quality of Coke; Developments in Explosives and Their Use in Coal Mines; and New Things in the Coal Cleaning World. "A Night in Old Heidelberg with Our Gang" was the feature of Tuesday evening; a rollicking get-together party given under the supervision of W. D. Turnbull, the Westinghouse Electric & Manufacturing Co.

PAPERS ON WEDNESDAY morning were presented under the supervision of W. J. German, general superintendent, the Pocahontas Fuel Co. The following were included: Generalization and Utilization of Power as Applied to Anthracite Mining; Power Saving Devices; Driving Rock Tunnels with Mechanical Loaders; Necessity for Discipline in Anthracite Mines; and Gathering in Relation to Mine Haulage. Papers delivered in the afternoon were: Safety Dividends; Housing Problems; Modern Steel Mine Car; Coal Preparation and Washing in the West Central District; Maintenance of Underground Mining Equipment; and Ironing Out Kinks in Mechanical Loading. The chairman for this session was T. J. Thomas, president, the Valier Coal Co. A special meeting of members of the Manufacturer's Section, and Coal Division Board of Governors,

Committee on





W. D. Turnbull



Jos. Bryan



Ralph Leavenworth



B. G. Shotton

Arrangements

Manufacturer's Section, was held in the afternoon. An informal dinner dance was given Wednesday evening with Thomas Moses, president, H. C. Frick Coke Co., as toastmaster. Special entertainment features were under the direction of P. C. Thomas, vice president, the Koppers Coal Co.

THURSDAY, MAY 11, the final day of the convention, saw one of the most important questions of the day come before the delegates with a paper and four discussions on What Shall Be Done With the Unemployed Miner? Other papers were: Successful Accident Prevention; Utilization and Research for Coal; Stump Air-Flow System; Purchased vs. Generated Power; Has Mechanized Mining Brought About Safer Mining; Colliery Utilization of Steam Power; and Mine Fan Economy. Chairmen for the two sessions were: P. C. Thomas, vice president in charge of operations, the Koppers Coal Co., and E. A. Holbrook, dean, School of Mines, University of Pittsburgh. Prize contest awards were made Thursday afternoon, with a special moving picture given in the evening: "Coal As a Raw Material in the Chemical Industry"; presented by S. R. Church, consulting engineer, of New York City. Several hundred coal operators spent Friday and Saturday in visiting various places of interest in the Pittsburgh District.

THE PITTSBURGH DISTRICT responded nobly to the many requests made upon it. Dr. L. E. Young, vice president, Pittsburgh Coal Co., chairman of the Committee on Local Arrangements, and the members of his committee are to be congratulated for the splendid work they have done—for it was through their untiring efforts that the Tenth May Meeting was a great success. The committee, with Dr. Young as chairman, was composed of: M. D. Cooper, Hillman Coal & Coke Co.; Thomas G. Fear, H. C. Frick Coke Co.; P. C. Thomas, the Koppers Coal Co.; John T. Ryan, Mine Safety Appliances Co.; Joseph Bryan,



General Electric Co.; G. G. Lail, General Electric Co.; John Andrews, Jr., Westinghouse Elec. & Mfg. Co.; Mark Egan, Pittsburgh Chamber of Commerce; K. F. Treschow, Engineers' Society of Western Pennsylvania; Graham Bright, Mine Safety Appliances Co.; J. B. Morrow, Pittsburgh Coal Co.; W. D. Turnbull, Westinghouse Elec. & Mfg. Co.; B. G. Shotton, Hendrick Manufacturing Co.; Ralph Leavenworth, Westinghouse Elec. & Mfg. Co.; Theodore Marvin, Explosives Engineer; and H. W. Clarke, McGraw-Hill Publishing Co.

PUBLICITY for the convention was handled through Ralph Leavenworth, general advertising manager of the Westinghouse Company.

The special reception committee did a splendid job in making everyone feel at home and in seeing that the delegates got the most out of the convention. The committee was composed of the following men: Dr. L. E. Young, vice president, the Pittsburgh Coal Co.; M. C. Angloch, president, Vesta Coal Co.; E. F. Austin, vice president, Brown Fayro Co.; R. C. Beerbower, Goodman Manufacturing Co.; M. D. Cooper, division general superintendent, Hillman Coal & Coke Co.; G. H. Deike, president, Mine Safety Appliances Co.; D. D. Dodge, vice president, W. J. Rainey, Inc.; J. H. Fulford, district manager, Jeffrey Manufacturing Co.; E. B. Gellatly, manager, Under-



Graham Bright



H. W. Clarke



Theodore Marvin

ground Conveyor Division, Jeffrey Mfg. Co.; C. W. Gibbs, general manager, Harwick Coal & Coke Co.; Dean E. A. Holbrook, University of Pittsburgh; W. R. Jarvis, manager, Sullivan Machinery Co.; C. M. Lingle, vice president, Buckeye Coal Co.; J. A. Malady, Pittsburgh representative, Post Glover Elec. Co.; James Patterson, general superintendent, Y. & O. Coal Co.; J. T. Ryan,

• SESSION •



P. C. Thomas



T. J. Thomas



J. A. Long



W. L. Robison



E. A. Holbrook

vice president, Mine Safety Appliances Co.; P. C. Thomas, vice president, Koppers Coal Co.; W. D. Turnbull, general engineer, Westinghouse Elec. & Mfg. Co.; W. P. Vance, general superintendent, Butler Consolidated Coal Co.; and Dean Edward Steidle, Pennsylvania State College.

LIKE THE CONVENTION, the 78 exhibitors present made the Tenth Annual Exposition of Coal Mining Machinery and Equipment the greatest since 1929. The plan of housing facilities, convention sessions, and manufacturing displays, all being under the same roof, worked out splendidly. The exposition far exceeded the anticipation of those responsible for it. All floor space in the two exposition halls was occupied. While there was less large and heavy equipment on the floor, every important manufacturer of equipment and supplies

was represented. The National Carbon Company, of the Union Carbide and Carbon Corporation, received the distinction of having the "most interesting" exhibit, with the Joy Brothers Coal Saw and the exhibit of the Mine Safety Appliances Company tying for second honorary mention. The coal saw was the largest piece of equipment on the floor of the exposition and attracted wide attention. Included in Mine Safety Appliances' display of the latest approved types of safety equipment was their new gas indicator, also a new light-weight skullgard.

For third place in the contest, General

CHAIRMEN •



R. H. Morris



W. J. German

Electric Company, of Schenectady, N. Y., and Post-Glover Electric Company, of Cincinnati, Ohio, tied. The former showed parts of their "House of Magic" which was en route to the Century of Progress. Post-Glover's exhibit included special things of interest along electrical supplies, but its main attraction seemed to be its enterprising and amiable Pittsburgh representative, Jack Malady.

THE EXPOSITION, unquestionably, was well worth while; aroused a great deal of interest; showed many entirely new things, and proved once again that the operating end of the coal industry is fully alive to its opportunities and responsibilities.

THE TWO EXHIBITION floors were crowded continuously between convention sessions, and the drive of the prize contest, successfully developed by Bruce Shotton, Hendricks Mfg. Co., saw to it that every booth was visited. While the actual machinery on the floor was not up



L. N. Thomas
Chairman
Program Committee



Thos. Moses
Toastmaster
Annual Dinner



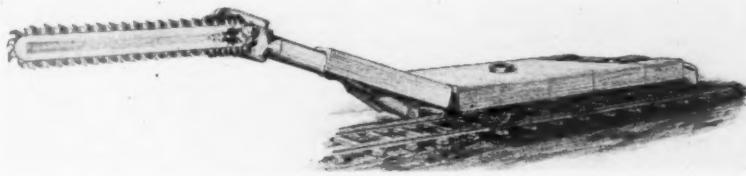
C. J. Ramsburg
Presiding Officer
Opening Luncheon

to the 1929 exposition, manufacturers have already expressed themselves as appreciating the satisfactory results which were received.

THE FOLLOWING 70 men won prizes in the prize contest: E. S. Wade, Windsor Power House Coal Co., cocktail shaker; C. A. Pearse, Carbon Fuel Co., copper beer set; R. Z. Beacom, Hillman Coal & Coke Co., copper beer set; T. W. Gray, Pittsburgh Coal Co., earthenware beer set; G. H. Hornickel, Anchor Coal Co., brass lamp; L. N. Thomas, Carbon Fuel Co., brass lamp; F. J. Bucher, Hillman Coal & Coke Co., trouble lamp; M. S. Mawhinney, H. C. Frick Coke Co., leather windbreaker; Frank Freeman, Pittsburgh Coal Co., leather windbreaker; Everett Roberts, Tenn. Consolidated Coal Co., pair candlesticks; L. B. McTigue, Heisley Coal Co., book ends and cigars; L. B. Abbott, Consolidation Coal Co., book ends; F. M. Graff, Westmoreland Mining Co., electric clock; A. P. Kifer, Pittsburgh Terminal Coal Co., electric clock; J. C. Wilson, Carnegie Coal Corp., billfold set; P. W. Painter, Westmoreland Coal Co., pen and pencil set; H. C. Goodhart, Westmoreland Coal Co.,

pen and pencil set; J. E. Fleet, Pittsburgh Terminal Coal Co., pencils; J. F. Colbert, Allegheny River Mining Co., pencils; G. T. Wall, Peabody Coal Co., auto robe; J. A. Brookes, Pittsburgh Terminal Coal Co., Micarda tray; W. R. Richards, Howard Gas Coal Co., tray and glasses; J. B. Stodart, Madeira Hill & Co., zipper case; Lafayette Tuck, West Va. Coal & Coke Co., zipper case; G. C.

Ferno, Pittsburgh Coal Co., drum of oil; E. R. Fellabaum, Pittsburgh Coal Co., drum of oil; Elmer Wilsoncroft, Hillman Coal & Coke Co., drum of oil; J. R. Siemon, Hillman Coal & Coke Co., drum of oil; V. A. Gahagan, Westmoreland Coal Co., drum of oil; Orvis Wertz, Rock Hill Coal & Iron Co., drum of oil; A. Shosikoski, Cochran Coal Co., drum of oil; Thomas Clark, Jamison Coal Corp.,



The new Joy Brothers Coal Saw, one of the feature attractions of the Exposition

Treverrow, Harwick Coal & Coke Co., electric razor hone; A. E. Moreau, Pittsburgh Coal Co., smokers stand; E. L. Carlisle, Peabody Coal Co., letter opener; Ed. Lewis, Wheeling Township Coal Co., letter opener; Ed. Murray, Pittsburgh Coal Co., waffle iron; C. H. Woolard, Westmoreland Coal Co., lawn sprinkler; R. H. Nicholas, Pittsburgh Coal Co., lawn sprinkler; R. W. Mackensen, Pittsburgh Coal Co., cork screw set; J. D. Rodgers, Stonega Coke & Coal Co., thermos desk set; M. D. Cooper, Hillman Coal & Coke Co., barometer; Charles Fisher, Y. & O. Coal Co., mixmaster; C. T. Hayden, O'Gara Coal Co., brush set; A. H. Jones, Westmoreland Coal Co., dozen golf balls; T. C. Cheasley, Sinclair Coal Co., dozen golf balls; J. B. Benson, Federal Coal & Coke Co., miners' hand book; Jesse Wyatt, Hillman Coal & Coke Co., rubber boots; C. B. Wilson, Pittsburgh Coal Co., first aid kit; Virgil Henry, Wheeling Township Coal Co., first aid kit; Andrew Grzesiak, Hillman Coal & Coke Co., first aid kit; Benj. Lazer, Pocahontas Coal & Coke Co., first aid kit; J. M. Davis, Clarkson Coal Mng. Co., first aid kit; J. A. Klein, Heisley Coal Co., safety shoes; E. C. Anderson, H. C. Frick Coke Co., tow rope; J. L. Kostyal, Pittsburgh Terminal Coal Corp., drum of oil; A. C. Gunter, Pittsburgh Coal Co., drum of oil; James Humes, Pittsburgh Coal Co., drum of oil; J. J.

drum of oil; E. J. Halbert, Allegheny River Mng. Co., Coal Mining; Elmer Landis, Davis Coal & Coke Co., Coal Mining; F. J. Meister, Meister Coal Mng. Co., Coal Mining; A. F. Diamond, Davis Coal & Coke Co., Coal Mining; S. B. Soles, Hillman Coal & Coke Co., Coal Mining; D. F. Welch, Windsor Power House Coal Co., Coal Mining; W. L. Mathias, Pittsburgh Coal Co., MINING CONGRESS JOURNAL; J. R. Swanson, Harwick Coal & Coke Co., MINING CONGRESS JOURNAL; N. W. Montgomery, Hillman Coal & Coke Co., MINING CONGRESS JOURNAL; J. E. Barron, Hillman Coal & Coke Co., MINING CONGRESS JOURNAL; F. A. Miller, Franklin County Coal Co., MINING CONGRESS JOURNAL; A. D. Muse, Leech Farm Coal Co., MINING CONGRESS JOURNAL.

JOSEPH BRYAN, of the General Electric Company, was chairman of the Golf Committee, and arranged for golf privileges at many of the important clubs in the Pittsburgh district. Special prizes were awarded in connection with the "Kickers Handicap" staged for each day, as follows: F. B. Dunbar, Mather Collieries, gladstone bag; J. R. Caseley, Buffalo & Susquehanna Coal & Coke Company, cocktail shaker; A. E. Clinton, Carnegie Steel Company, wrist watch; P. C. Thomas, Koppers Coal Company,

(Continued on page 33)



"Mine of Prosperity" Honor Trophy awarded the Union Carbide Company for the most attractive exhibit

MODERN MINING PRACTICE

THE COAL SAW

By C. D. McLaughlin

Supt., Pioneer Coal Company

THE DEVELOPMENT of the Coal Saw to its present highly practical state has improved the quality and value of the product and made better and safer working conditions in the mines. All of which is accomplished without any change in organization and supervision or the displacement of labor.

It was the heavy demand for large lump coal which turned the Pioneer Coal Company to the coal saw. These were floor-type saws. Maintenance costs for these saws, including labor and material thus far, has been negligible. Owing to the nature of our coal it is only necessary to make one horizontal cut. Miners roll out the large slabs of coal and split it down with picks to sizes that can be loaded into mine cars. We find it unnecessary to pull out a "key block." Furthermore we have not had to employ the hydraulic breaker pad. Neither do we have to do any drilling or shooting. Two men, an operator and a helper, are required to operate the saw. Our present cost in the mine car is 2.8 cents per ton less for sawed coal than for shot coal.

Our sawed lump coal has made a very favorable impression with our trade. By eliminating explosives we not only obtain more and larger lumps, but lumps that are not shocked or shattered. Consequently the coal withstands handling and transportation with far less degradation than was true of our shot coal. This is a great advantage to the consumer and the dealer that has enabled us to obtain a premium price for our sawed lump that we could not have obtained otherwise.

BETTER MACHINE BITS

By James Hyslop

Asst. Supt., Dresser Mine, Walter Bledsoe & Co.

THE MOST commonly used stock of bit is a special grade of open-hearth steel containing 70 to 90 point carbon, a steel which will develop excellent physical properties when given the correct heat treatment. The common practice of treatment is to heat the bit to forging temperature, forge to the desired shape, then quench in some sort of water or oil solution. There are three reasons why such a method is never satisfactory:

1. The bits will be of a widely varying quality.
2. The bits are usually quenched by water. As a consequence the bits break readily and will ruin every cutter chain set screw in the mine.
3. The operation is incomplete.

After considerable thought Walter Bledsoe and Company finally dropped back to the old idea of hardening the bit from the forging heat. The bits are heated in an oil-fired furnace and forged in a roller. A little time is allowed between the forging and the quenching process which takes away some of the brittleness. When the bit leaves the roller it falls on a steel chain conveyor which drops it in an oil quenching tank. After 14 seconds of cooling the bits are dropped into a basket on the opposite side of the quenching tank. The bits are then dumped onto a drip pan and the oil allowed to drain off. At this stage they are very brittle. Tempering is done by placing the bits in a bath of fusible salt. The salt, fusible at 350 degrees, drops 150 degrees

IN THIS ISSUE we present briefs of the papers which were delivered at the sessions of the Tenth Annual Convention of the Coal Division of the American Mining Congress, which was held at Pittsburgh, Pa., during the week of May 8. No discussions are included in this issue.

Our 1933 Year Book, which will be published this summer, will contain all of the papers, and discussions, presented at this convention, together with cuts showing the slides that accompanied them.

This book will soon go to press and orders are now being taken for copies for future delivery.

when the bits are immersed. The bits are allowed to soak for 15 minutes while the temperature comes up. As soon as the bits are drawn to 575 degrees they are taken out and allowed to air cool.

Results from this system are as follows: Formerly we used two bits per ton of coal mined. The new figure reduces the figure to 1.06, nearly a 50 percent reduction. Our consumption of steel fell off 40 percent and our sharpening cost dropped 31 percent per thousand tons of coal mined.

EFFECTIVE BLASTING MEANS INCREASED PROFITS AND SAFETY

By C. J. Sandoe

Vice Pres., West Virginia Coal Company of Missouri

IN NOVEMBER, 1931, we made our first test of the Cardox method of blasting coal at our St. Elens mine, near O'Fallon, Ill. In this test we were interested in the two problems mentioned—the safety factor and the making of a better grade of coal. After many obstacles in the way of interference other than the actual handling of this particular method, we found that this method of blasting reduced our accident hazard and improved the quality of our coal.

The coal is loaded with the larger type mechanical loaders. In using Cardox blasting with this type of machine, we have made a reduction in our 2-in. screenings of approximately 19 percent. The greater part of the reduction has been in the Nos. 4 and 5 sizes and the greatest increase has been in the 6-in. lump, which is increased approximately 13 percent. In the 6 x 3-in. egg there has been an increase of approximately 6 percent, while the 3 x 2-in. and 2 x 1½-in. have remained about the same in percentage.

As a factor in reducing our accident hazard, our limited experience has shown that Cardox eliminates obnoxious gas and smoke in rooms where miners have to work. The hazard of mine coal fires is done away with, and with it goes the dangers connected with the sealing off of the same. The danger connected with the handling, transportation, and storage of explosives in the mine is eliminated and the possibility of dust and gas explosions from blasting coal has been reduced to a minimum. Cardox blasting

appears to have little effect on the roof and walls, and since we have been using it we have had less falls at the face than before.

While the first cost of the Cardox method is more expensive than powder, our own experience has warranted its continued use in that we have increased our sales realization through the improvement of the quality of our coal, the reduction of the percentage in minus 2-in. coal, and by the reduction of the accident hazard.

DEVELOPMENTS IN COAL MINING EXPLOSIVES

By C. S. Comeaux

Sect., Institute of Makers of Explosives

THE ORIGINAL permissible explosives were nitroglycerin-type powders, which were not very suitable for the work required. They were not as economical or satisfactory as the black blasting powder that had been used. When nitroglycerin permisibles were introduced their high rate of detonation and higher bulk strength caused a greater shattering action of the coal. Black blasting powder did not have this desired shattering effect, and did have a good spreading effect.

The explosive industry realized the shortcomings of the nitroglycerin permissible explosive and continued research to improve them. The next step became the ammonium nitrate permissible. The bulk strength of the permissible at this time was too high, and the rate of detonation was also too high for the production of lump coal. A rate of detonation of 8,000 ft. per second for permisibles was considered low velocity, compared with 1,500 sec. ft. for black blasting powder. About 1924 permisibles with velocities of 5,000 and 6,000 sec. ft. were produced.

In 1925 permisibles with cartridge counts of 175 per 50-lb. box were produced, while today there are cartridge counts as high as 250 per 50-lb. box. The latest list of the Bureau of Mines gives about 140 permissible dynamites. Because the choice and method of use of a permissible are probably the most important items affecting lump-coal production, explosive manufacturers have bent their efforts toward solving these problems. As a result of this many of the present-day high-count permisibles cost less per cartridge than the same size cartridge of pellet powder, and under the same conditions produce equal results when used on a cartridge-for-cartridge basis.

More than two-thirds of the 36 new ammonium permisibles have velocities below 9,000 sec. ft., with the unit defective charges lying between 200 and 230. The other 12 new permisibles added to the list in the past two years are gelatins and semigelatins; permisibles with the ability to withstand water.

USE OF THE SHAKING CONVEYOR IN ANTHRACITE MINING

By Jerome McCrystle

Chief Engr., Wyoming Valley Collieries Company

IT IS ESTIMATED that in the anthracite field of Pennsylvania there are 900 shaking conveyors in active operation. Of this number 300 were installed during the past 12 months—an increase of 50 percent on the number employed prior to that time. The shaking conveyor which has had the most general application is the type rated to deliver about 20 tons per hour over a trough having a cross-sectional area of 42½ sq. in. on a gradient equivalent to horizontal.

The shaking conveyor is being used to advantage on pitches from the horizontal upwards to 20 degrees in favor of the load, and in veins whose working thickness is above 24 in., although loading efficiency tapers off rapidly below a height of 30 in. The economic value of the shaking conveyor to meet conditions peculiar to anthracite mining is, first, as a means of face transportation; and, secondly, as a loading facility.

The upward mechanical trend of anthracite mining is partly due to the constant addition of devices intended to facilitate the use and scope of the shaking conveyor. Among new and improved accessories may be noted, a smaller duckbill; drive jacks of the ball-bearing type; inexpensive ball frames; car movers; small winches operated by the shaker drive directly; dolly or pony trucks; radius chutes that permit turning the pan line as much as 90 degrees; and "Y" chutes that allow the operation of two complete trough lines to a single delivery point.

The shaking conveyor has proved to have a decided value in development work; it permits in gangways where bottom rock is taken, to mine the coal first and then lift the rock, or to alternately load the coal and then the rock daily. Where the duckbill is used in rock and coal there are some records showing more than 50 percent cost reduction, and three to four times the speed of development.

LUBRICATION COST FOR LOADING MACHINES

By G. S. Jenkins

Mech. Engr., Consolidated Coal Co. of St. Louis

DURING OUR first year's experience in 1928 with loading machines we were showing an oil cost of from $1\frac{1}{2}$ to 2 cents a ton. We managed to get down to just over 1 cent a ton by 1931, and during the past two years have maintained an oil cost just over 3 mills per ton. This includes hydraulic oil and lubricant.

We adopted the use of oil in all our machines as the lubricant temperatures were lower with oil than with grease and the viscosity of the oil at the operating temperatures was higher than that of the grease. We haven't had a stuck or burned clutch at the present writing, and inspection of the gears in the transmission shows no visible signs of wear.

Lubricating the machines is done on the night shift—the crew consists of three men, one repairman, one head greaser and assistant repairman, and one greaser. The greasing truck is towed with a battery locomotive. When the repairman inspects and makes the necessary repairs the other two lubricate the machine. We are working the machine on a concentrated territory—10 machines in 5 consecutive panels.

A new machine will give about 20 tons of coal per pound of lubricant or about 150 tons of coal per gallon of lubricant. We consider that 15 tons per pound or about 120 tons per gallon as being about all we can economically expect out of the machines, and as long as a machine approximates this we feel satisfied. Where a machine falls below this we check it over to find the source of the leaks.

For the hydraulic system we use red engine oil and get from 200 to 400 tons of coal per gallon, averaging close to 300. We have tried ordinary "hydraulic oil" and find that the action is too sluggish and a heavier oil gives too fast an action.

DRIVING ROCK TUNNEL WITH MECHANICAL LOADERS

By O. G. Sharner

Superintendent, Union Pacific Coal Co.

WHILE BUSINESS conditions in 1932 did not justify any elaborate construction program, it was considered necessary to carry out the main features of the mining plan of the Hanna mines of

the Union Pacific Coal Company so that future tonnage would be assured. The mining plan called for a single tunnel driven in rock 1,280 ft. long and 7 ft. by 12 ft. in cross section.

It was decided to attack the driving of this tunnel on a company shift basis and to do the mucking with a mechanical loader. Three crews of three men each were used, each crew composed of one loading operator, one face man, and one motorman who could handle explosives and help at the face.

The danger and confusion of setting permanent timbering was avoided by a temporary timbering system of adjustable steel props, made from Sullivan screw jack heads mounted on a standard 2-in. pipe. No foremen were employed directly on the job; supervision being handled by regular mine officials. No attempt was made to complete a cycle. The accident record showed only two lost-time accidents during the operation.

The cycle of operations was as follows:

1. Sixteen 8-ft. holes drilled for each round, giving fewer larger pieces of rock and facilitating the loading operation.

2. Top holes drilled immediately after blasting, with each row of holes drilled as rapidly as the loading advances.

3. Drilling done with light Sullivan DR-371 drills, one man to each drill, and two or three drills in operation at one time.

The entire cost for driving this tunnel amounted to \$22,059.40, including drilling and blasting, loading, timbering, track and trolley, ventilation, and drainage, tools, hauling and dumping, repair and reconditioning of compressor, and rock chute.

IRONING OUT KINKS IN MECHANICAL LOADING

By E. J. Christy

Cons. Engr., Wheeling Township Coal Mng. Co.

MANY KINKS confront a mechanical mining operation that must be ironed out in a brief period, if progress is to be made in a mechanization program. One of the first problems that confronts a mechanized operation is lack of knowledge of the practical application of the equipment. We visit various operations which have similar conditions and observe the preparation, loading, and transportation; then study our own conditions and select the equipment which we consider the best adapted to accomplish our plans of mechanical mining which usually is the plan previously used in hand mining.

This plan was followed in the mechanical operation of the Wheeling Township Coal Mining Company with the first loading machine starting in a section which was developed by hand loading to a point at the fourth room on a pair of butt entries which extended only the length of 14 rooms. This was our first kink in mechanical mining, as there was not sufficient productive tonnage to justify the development through the 150-ft. barrier pillars.

Working double shift on a tonnage basis in the same rooms and entries, presented a kink which had to be ironed out. We found it very difficult to have the various operations left by one shift in a condition that the next shift following could go into normal production at the beginning of the shift. It was decided that some method had to be put in effect that would call to the attention of all employees as to how each particular part of an operation is to be performed. The method adopted was what we term a "standard practice sheet" which specifies the subject, duties, and upon whom the responsibility is placed. When a standard practice is issued or changed, a copy is posted on the various bulletin boards and a copy given to each foreman in all departments to be placed on his standard practice binder for future reference.

MAIN LINE HAULAGE

By L. E. Grant

Supt., Chesapeake & Ohio Rwy. Co.

OUR EXPERIENCE has been that with 13-ton locomotives and 3-ton cars moving at a fair rate of speed, 50-lb. steel is heavy enough and can be economically maintained. Frequent inspections of the main line are made, not from a sense of duty but with the thought that wrecks and derailments result not from bad luck but from bad management, and it is our personal responsibility to see that they do not occur.

Serious consideration should be given to the relation the main line bears to the gathering system. A definite schedule of running time can be maintained for the main line and the size of trips can be definitely established and locomotive crews can be trained not to exceed the fixed limit. If the gathering crews know that the haulage locomotive is due on the parting at a certain time with so many empties, they plan their running time accordingly and it is but a short time until a schedule becomes fixed in the minds of everyone, even to the loader at the face.

Nothing is gained by unbalanced trips. The overloading of locomotives always presents the grave danger of burning out armatures and field coils, and in addition you are paying for energy that can not be utilized. It is far safer and certainly easier on everyone and everything concerned to have a locomotive pulling a trip of 20 cars making a reasonable speed on schedule time, than to have a locomotive running most any time and pulling a small trip one time and an overloaded one another time.

A dispatcher is necessary to successfully coordinate the haulage system with the other activities in the mine. We do not employ an elaborate signal system but depend on telephones, which are placed at every necessary point on the gathering system and on the main line. The dispatcher's office is placed along the main line so he is in constant personal touch with the crews. Our main-line locomotives as well as our gathering locomotives move on orders given by the dispatcher to the brakeman.

GATHERING IN RELATION TO MINE HAULAGE

By David W. Jones

Supt., Valier Coal Company

THREE GENERAL HEADINGS will classify the usual systems of gathering, as follows: (1) Gathering mechanically loaded coal; (2) gathering conveyor-loaded coal; and (3) gathering hand-loaded coal.

In determining whether one or two locomotives should be used in connection with a mechanical loading unit, consideration should be given to the maximum number of cars it is possible to load under the existing conditions within a given time by operating the machine continuously. The added expense in addition to the locomotive investment would be the labor of one motorman. One triprider could be employed in connection with the operation of two locomotives by remaining at the proper place to throw switches and couple the cars. Practically no saving can be made by employing two locomotives for changing cars when the face is located within 100 ft. from the entry.

When a mechanical loading unit is served by a single locomotive, it is the usual practice for the locomotive to be coupled to as many cars as the motorman can handle quickly and safely. The triprider remains with the car next to the loading machine and signals the motorman to move forward or backward as required. If the gathering locomotive motorman starts out with, say, four empties, he will leave the fourth empty spotted under the loading machine, and while it is being loaded move the three loads out on the entry, then return with three or four more empties. It is not well to have more than five cars coupled for shifting in

this manner, as the motorman is not able to control the slack definitely enough to spot the empty being loaded in the proper place.

MODERN STEEL MINE CAR

By J. S. Miller

Director of Research, Lehigh Navigation Coal Co.

OUR LATEST TYPE of mine car, with its integral underframe, pedestals and bottom plate, equipped with spring draft gear, mechanical brakes and roller bearings, is an excellent investment because it has reduced the maintenance cost of our car repairs 50 percent and eliminated many delays incidental to transportation.

About 1920, a skeleton type of cast-steel underframe which included the side sills and draft sills was put into service. To this frame, the pedestals, bottom plates, side plates, and end plates were riveted. This frame stood up fairly well in service. Eventually the riveted portions of this car were loosened by constant pounding and the action of the mine water. The bottom plates curled and pulled through the rivets. Increasing the size of the rivets corrected much of the pedestal difficulty, but the bottom plates required renewal.

Developments in the steel industry progressed to the point where in 1930 it was prepared to cast as an integral unit the entire underframe, pedestals, and bottom plate. It has shown no evidence of deterioration or corrosion. A more recent improvement in this type of bottom has been brought about through the development of a special integral housing for the spring draft gear and bumper which permits the floor to be depressed and creates a round bathtub type of bottom. This concave bottom increases the capacity of the car about 15 percent, but economies in metal distribution have decreased its weight to 2,000 lbs., thereby saving about 10 percent in weight.

Other improvements in modern mine-car construction are: Loose wheels with an inside roller bearing; pressure grease gun for lubrication of roller bearings; mechanical equalized brakes; a yielding shock absorbing device in draft gearing; spring supports on axle mountings; and manganese steel wheels. The company also found it profitable to paint the cars once a year, at a cost of \$2.75 per car.

MAINTENANCE OF MINING MACHINERY AND OTHER UNDER-GROUND EQUIPMENT

By E. J. Newbaker

Vice Pres. in Chg. Operations, The Berwind-White Coal Mng. Co.

IMPROPER MAINTENANCE of machinery installed in mines to reduce production costs will defeat the purpose for which the machinery was installed, as every operating machine or piece of equipment is coordinated with other productive elements so that failure of any unit may be reflected throughout the mine. The actual cost of repairing a machine and putting it into operating condition may be only a minor portion of the expense when a machine breaks down.

The maintenance program of the Berwind-White Coal Mining Company is based on these premises. The responsibility for the proper maintenance of all mining machinery rests jointly on the superintendent of mines and the superintendent of the electrical department. The advisability of dividing this responsibility might be questioned in some organizations, but it has worked successfully for the Berwind-White Coal Mining Company.

All locomotives, when not in service, are stored in motor barns which are adequately provided with repair facilities to make all repairs. The motor-barn men have no other duties outside of repairing and lubricating locomotives. The responsibility for the latter is placed on the maintenance men rather than the operators. Every locomotive is in-

spected quarterly by a competent locomotive inspector from the electrical department.

Mines that are conveyorized have two electricians for every five room conveyors. They lubricate the conveyors every working shift and the shortwall chain machines, fans and car pullers at regular intervals. These electricians make all the repairs which can or must be made during the working shift. They also install the operating wiring for this machinery in accordance with a standard wiring diagram for conveyor installations. At the end of their shift they report to the head conveyor electrician the condition of the machinery in their section, especially pointing out anticipated repairs which will soon be required.

MINE FAN ECONOMY

By John E. Jones

Safety Engr., Old Ben Coal Corp.

THE FAN is the most wasteful consumer of power in or about the coal mine, and there is probably no operating mechanism in a coal mine the principles of which are so little understood by the management. The limits of understanding in regards to the fan are usually the mechanical maintenance and variation in speed. Successful mine operation includes the application of as great a variety of scientific knowledge as does possibly any other type of industrial activity. In this necessary knowledge comes ventilation, and the chief single factor in ventilation is the fan!

Available fan efficiency is far greater than has been generally realized. In a survey of 15 coal mines, whose total daily tonnage amounted to 69,700 tons, it was found that the fans on the average were 8.6 times too large for the mines they served. This meant a possible power reduction of 43.5 percent. The highest efficiency of the fan depends on two things: The inherent qualities of the fan for efficient performance; and how well the characteristics of the fan fit the characteristics of the mine. In the evolution of the mine fan the tendency in recent years has been from the large slow-moving fans to the smaller and speedier ones, with backward curve blades rather than forward curved blades.

NEW THINGS FOR ANTHRACITE

Developed by the Jedd-Highland Coal Co.

By Donald Markle

Pres., Jedd-Highland Coal Co.

AUTOMATIC AIR VALVE

THIS VALVE was designed to prevent the misuse of air and to permit the passage of a predetermined maximum flow of air.

In operation the valve is attached between the pipe and the hose. When air is admitted to the valve it closes automatically, except for a small leak through a 1/16-in. hole in the valve disc. This leakage will build up pressure in the hose line, if this line is tight. When the pressures on either side of the valve are equalized, the valve opens against the loading piston.

The valve remains open so long as the drill or other machine is either idle or in use. If, however, the line is broken, or if the machine requires more air than normal, then the increased flow will cause a pressure drop across the orifice, which will close the valve. With this valve in the line it is impossible to wastefully blow compressed air from an open hose line.

COMBINED COOKING STOVE AND HEATING FURNACE

THE STOVE CONSISTS of two firepots and two extended surface heat exchangers. The surfaces of the firepots and the heat exchangers are cooled by a current of air forced around them by a small fan, which air is then conductable to any remote location. With two firepots in operation over 100,000 B. t. u. per hour

may be added to this air stream by the stove and this is available for heating other remote rooms. This is adequate for the average six-room house. The stove is supplied with water heating equipment, an oven, controllable as to temperature, and of course has the normal cooking surface on the top.

COLLIERY UTILIZATION OF STEAM POWER

By Frank N. Becker

Director of Research, Jedd-Highland Coal Co.

ELECTRICITY IS IDEAL for remote machinery. We believe steam is more economical and convenient for hoists, breaker drives, compressors, pumps, and fans where these are near a boiler plant; that is, not over 1,000 to 1,200 ft. away. Moreover, in emergencies more capacity is available in steam than in electrical equipment. The only premium we pay is a few more pounds of coal, with no hereafter to consider. With electricity we would pay the increased demand charge for the following year.

On one of our properties electricity, from the Utility Company, is received at 11,000 volts at central point. The present demand is about 1,500 kws., the power factor 97 percent, and the cost is in excess of \$65,000 per year. At one of our oldest boiler plants the charges for labor, maintenance, and water exceeds \$30,000 per year, not including coal. This steam, generated at 425 lbs. and 125 degrees superheat, passed through a bleeder turbine will generate in excess of 1,200 kws. and the extracted steam will be the correct pressure for our present steam equipment.

We are building a plant here now based upon this steam cycle. It consists of two boilers to operate at 425 lbs. and 125 degrees superheat and a bleeder turbine, extracting a 165-lb. gauge. The generator will parallel the public utility from whom about 300 kws. will be purchased. The predicted economies are such that the plant will pay about 25 percent return per year over fixed charges. Power will be taken from the power company to absorb the sharp peaks, as the turbine will be base loaded. This will be controlled through a power limiter device, which will pick the turbine up for occasional steady heavy loads.

POWER SAVING

By E. R. Price

Supt., Inland Steel Company

EARLY ALL power rates are based upon a dual charge—a demand and an energy charge. The demand, or readiness to serve charge, represents the charge that must be paid on the capital investment in power plants, high-tension lines, transformer substation, and other equipment. Then we have the energy charge, which is the metered power used.

Demand limiters are used to keep the peak load to the minimum. Such meters have been successful in a number of cases. The load should be studied from the watt-hour meter or demand charts to determine the nature of the load curve, for unless there are some decided points to be cut off, their application will not be effective. Such devices, however, cut off the power only and do nothing toward eliminating conditions which cause high peaks or high demands. Other methods of keeping the peak down are automatic circuit breakers, low-set substation breakers, a local dispatcher, and—the most practical method—distributing the load as much as possible over the 24-hour period.

One of the most important phases of power requirements is provisions for the proper number and location of substations, as well as for the proper feeder and return capacity. As the active working faces advance from the source of power or from the substations, additional feeder and return capacity are required to provide adequate voltage at the faces, and in larger mines the installation of new substations is necessitated. Low voltage results in a loss of energy and mine

operations are slowed up, as well as armature and coil failures resulting.

Bonding is one of the most important factors in the economical use of electrical equipment and reduction of power costs, and no single item of equal importance is so neglected.

Experience shows that as much coal can be gathered with slow-speed equipment as with the so-called normal-speed equipment. The power consumption is in direct proportion to the speed. Furthermore, the equipment operates at full speed in gathering work, eliminating resistance loss which occurs when operating at the same speed and using normal speed equipment. For economical operation, slow-speed locomotives should be used in gathering service.

PURCHASED VERSUS GENERATED POWER

By Peter F. Loftus
Consulting Engineer, Pittsburgh, Pa.

HERE IS no doubt that a revision of utility rate structures would reduce power costs per unit of coal production. Many of you have already demanded such revisions. But, is it not true that your demands have been based on data of a general nature? Therefore, the importance of securing indisputable factual data cannot be sufficiently emphasized, for without these data your arguments are not logically conclusive and will fail to convince either the utility or the public service commission.

The analysis of the complicated factors involved in your specific problem may indicate opportunities for real economies, and will certainly determine whether lower power costs can be secured by either the purchase or generation of power. In these analytical comparisons your power costs whether purchased or generated must include all charges. The period of comparison must be of sufficient extent to be representative of all conditions of operation, periods of maximum or of minimum tonnage, periods of maximum or of minimum drainage, periods of flood or of drought, periods of high or low realization, periods of waste fuel or lack of waste fuel—when every pound of coal has a commercial value.

When the factual data developed by these studies are properly applied, they will, first, permit you to operate at the lowest power cost consistent with economical, efficient operation; second, support your demands, for rate revisions and reductions; third, determine whether an economic justification exists for the installation and operation of your own power producing apparatus.

The influence that improved isolated plants will have in forcing a further downward revision of utility rates, is at best a conjecture. The fact remains, however, that if the operation of such a modern efficient isolated plant will furnish the power requirements of industry at a lower cost than they could be purchased from a utility, then, there is a justification for the isolated plant, and the utilities must face the facts.

GENERALIZATION AND UTILIZATION OF POWER AS APPLIED TO ANTHRACITE MINING

By Paul Sterling, Mech. Engr.,
Edgar Schweitzer, Fuel Engr.,
Lehigh Valley Coal Co.

THE CHANGE from manual to mechanical power in the anthracite coal fields practically followed the development in other manufacturing indus-

tries. The use of the cylindrical boilers at 75 pounds steam pressure continued up to approximately 1910, and in 1930 there were still 19 in service. The fuel used in the early days was pea coal and larger and amounted to about 25 percent of the production. The normal consumption of fuel at an anthracite mine with its own power plant approximates 8 percent of its total production. The reduction in fuel consumption has been due entirely to larger units and improved furnace construction, and was prompted by a market demand for the anthracite fines known as buck, rice, and barley.

Pulverized anthracite has been experimented with and two plants operated, but the difficulty of crushing rather than of combustion seems to have been its greatest drawback. The possibility of better preparation of the fine sizes has led to the burning without being pulverized, and is generally the present day practice. The burning of anthracite fines has led to the use of arches over the entire grate. Complete covering is not necessary, but large furnace volume together with partial arch covering is required for high efficiency and capacity.

Coincident with boiler development has been the improvement in the arrangement and proportions of drafting apparatus. The modern plant contains from 600 to 700 H. P. units to operate at 200 percent rating, burning No. 4 buck, with one spare boiler. Without any doubt the future steam line will be welded complete, excepting main valve connections which will be flanged. Naturally, the primary power is steam, and if a colliery is concentrated within a small area, the use of steam units is preferable for main operating units, with electric generation for inside haulage and other isolated units. Pumping is a 365-day per year operation. The recent development of automatic steam turbine driven centrifugal pump equipment will be given serious consideration.

ROOF CONTROL

By R. E. Salvati

Manager, Pond Creek Pocahontas Co.

THE AVERAGE thickness of the coal is 50 inches; the cover varies from 300 to 1,100 feet thick and consists of sandy shale and sandstone. The bottom is a hard slate. The roof does not have a tendency to bend before breaking and we are fortunate in having a top which makes good roof in the face mining and is easily broken in the pillar extraction.

The system used is the room and pillar retreating. Butt entries are driven from 16 to 18 feet wide on 300-foot centers. The rooms are 18 feet wide on 62-foot centers. Breakthroughs between the rooms are staggered and the room pillars average 44 feet by 62 feet. This leaves from 65 to 70 percent of the coal in the pillar recovery.

All the butt entries are driven up to the last room, which is the twenty-fifth, before any rooms are driven whatever, with the exception of 1, 2, 12 and 13 rooms. These are driven through from one butt entry to the next in order to cut down the distances our gathering locomotive must travel. As the pillar in the first room is started back and just as soon as a 45 degree line is reached the next room is started and so on. This means that the track used in the first workings is also used in pulling pillars.

Pockets are driven through the pillar 16 feet wide with a 10-foot wing left to protect the miner. About seven cuts are necessary to cut through the coal in the pillars. After a fall has been secured the pocket is open-ended and the miner places two rows of timbers to take the place of the 10-foot wing. Nothing less than six-inch timbers are used on the pillar line, and cap pieces three inches by six inches by 15 inches long are placed parallel with the breaker line. Two lines of breaker timbers are set on four-foot centers and are staggered.

POSSIBLE RESULTS OF STANDARDIZED MINE TIMBERS

By E. B. Agee

Superintendent, Dehue Mines, Youngstown Mines Corporation.

THE MINING INDUSTRY as a whole is far behind other industries in the development of chemical science in timber preserving and in the use of treated timbers in permanent workings at the mine. About 293,000,000 feet of timber are used by the mines of the nation annually, with 15 percent used for permanent workings, and 85 percent for temporary workings.

Our system of mining at Dehue, West Va., is room and pillar, with open end mining in the extraction of pillars. The mines are operated in the Eagle seam of coal, averaging 62 inches in height, with a draw slate above. We have adopted seven standard sizes of mine timbers at Dehue, keeping in mind the fact that a minimum number of standard pieces would be conducive of stricter enforcement by the bosses. The seven sizes are: 3"x5"x6' Ties—sawed secondary haulage 5"x7"x6' Ties—sawed primary haulage 6"x8"x6' Ties—sawed primary haulage 4"x8"x12' Cross-bars sawed 2 1/2"x6"x18' Wedges-sawed 5 1/2' Posts—round and split 6' Posts—round and split

Specifications are: ties and cross-bars shall be cut from oak, free of decay or red heart; ties shall not be more than 1/4-in. under or 3/4-in. over in thickness, sawed square at the ends and the four sides; cross-bars must be sawed to specifications, squared at the ends; props must be sawed square at the ends and, if round, measure not less than 6 inches in diameter; only hardwoods are accepted for props.

In summing up the possible results of standardized mine timbers and systematic methods of mine timbering, the advantages are easily apparent:

1. Less waste of and lower timber costs.
2. Greater safety to employees and lower compensation costs.
3. More efficient and safer hauling.
4. Reductions in falls of roof and coal and improved coal recovery.
5. Lower production costs.

SUCCESSFUL ACCIDENT PREVENTION

By A. L. Hunt
General Superintendent, Pennsylvania Coal & Coke Co.

DURING THE YEAR 1930 the Pennsylvania Coal & Coke Corporation had 824 reported accidents with a loss of 8,884 days. In 1932 the company had

a loss of 2,366 days with 248 reported accidents. This shows a great decrease in the number of accidents, and we take three rules from the National Mine Handbook as a means for further decrease:

1. Intelligent interest on the part of the higher officials of the company.

2. Constant supervision by those in immediate control of mine operations for the purpose of insuring safety of working places.

3. Safety-consciousness on the part of the men themselves to be developed through a persistent educational campaign.

In all measures used by this company, the employees have had a chance to discuss and help initiate any movement toward eliminating hazards in regard to safety. Every official has received intensive training through the Bureau of Mines as to the proper methods to be used in safe-guarding the health and safety of our employees.

The Pennsylvania Coal & Coke Company employs three methods of coal mining: hand-loading, conveyors, and scoops. The latter two have shown a decided advantage over hand-loading. One fatal accident, and one of permanent disability were had in 6,006,086 net tons loaded by the latter two methods. In 1930 the compensation cost per net ton was .037; 1931 was .021; and 1932 was .011, a new all-time low for the company. Hard-boiled hats, goggles, and safety-toed shoes were in use nearly all the time.

SAFETY DIVIDENDS

By Thomas E. Lightfoot

Engineer in Charge of Accident Prevention and Compensation, The Koppers Coal Company

THE EXPERIENCE of the Koppers Coal Company with the safety dividend or bonus system has shown a steady and constant improvement. The arrangement is far superior than simply adding so much money to the foreman's pay check, and not only are the foremen anxious to earn these dividends for the money value, but they take great pride in acquiring their certificates. The amount of the safety dividend is determined by the total number of man hours worked by all employees under the jurisdiction of a foreman for a particular month. The foreman is paid 30 cents per 100 man hours if he has had no accidents of any kind, 20 cents per 100 hours if he had but one lost time noncompensable accident, and 10 cents per 100 hours if he had two noncompensable lost time accidents. If he has had more than two noncompensable lost time accidents or any compensable accident whether time is lost or not, he is not entitled to receive a dividend for that month.

In the case of both the section and mine foreman, the maximum safety dividend is \$15.00 a month, regardless of the number of man hours worked. Outside foremen are paid at the rate of 15 cents per 100 man hours worked, providing they have no accidents of any kind; 10 cents per 100 hours worked in the case of one lost time non-compensable accident; and 5 cents per 100 hours worked in the case of two lost time noncompen-

sable accidents, with a maximum of \$7.50.

The rating of the safety dividend is done by an inspector, who is hard boiled and allows no tolerance in his interpretation of the safety rules or the standard timbering plan. The penalties imposed for sub-standard conditions vary from 200 points per working place down to 10 points.

PREVENTION OF PERSONAL INJURIES IN MINE OPERATION

By H. L. Richardson

Vice President, West Kentucky Coal Co.

THE WEST KENTUCKY Coal Company's program for a new record in accident prevention was first laid before the various mine superintendents and foremen in semi-monthly meetings. Every effort was made to assure complete representation of every mine. A report of all accidents, no matter how trivial, was made and thorough discussions as to the causes of accidents and their prevention in the future were carefully considered. In cases where an accident required a doctor's attention the foreman was required to attend the injured each day. The result was twofold. This personal contact with the injured man impressed upon the foreman the desirability of preventing accidents. It also developed a favorable reaction on the part of the injured man because of the personal interest taken in his case by the company.

We have found in our program that very few mechanical changes of new mechanical equipment were needed. No particular change in fundamental mining methods was needed. The whole result seems to be based on getting across to all employees, from the president down to the day laborer around the mine, that accidents are very largely preventable if constant and external vigilance is carried on by every man all the time. As to the success of our method, our accident cost fell from 2.22 cents per ton on 2,639,000 tons in 1930 to 1.64 cents per ton on 1,900,000 in 1931, and to only .74 cents per ton on 2,007,000 in 1932.

HAS MECHANIZED MINING BROUGHT SAFER COAL MINING?

By Lyman Fearn

State Coal Mine Inspector, Rock Springs, Wyoming.

HERE WERE 493,067 more tons of coal per fatal accident mined in Wyoming by mechanical means during 1932 than were mined by hand loading means.

During the past six years 16,573,494 tons of coal have been mined and loaded mechanically, and 21 fatal accidents occurred in and around the working faces, which shows that 789,214 tons of coal were mined per fatal accident at the face. Figures for the same period in regard to hand loading methods showed 18,657,572 tons of coal mined with 63 fatal accidents, making 296,152 tons mined per fatal accident at the face.

The constant cry by mine officials for speed in production is a great factor against safety. Many mine officials expect too much from mechanical loading equipment and in many cases disregard safety practices in order to complete a

certain number of cycles of operations during the working shift. When the management realizes that safety is a greater factor in the reduction of costs, we shall see an improvement along the lines of safety, and there will be less cry for speed in production.

Wherever mechanical loading has been installed it has brought about a reduction in man-power in operation. This has given the mine management the advantage of being able to select its men. The matter of concentration of the working area is a big factor in safe operation. The installation of mechanical loading has brought about greater concentration and in my opinion, mechanical loading will continue bringing about safer mining methods.

COAL PREPARATION AND WASHING IN MINE OPERATION

By C. Y. Thomas

Mechanical Engineer, Pittsburg & Midway Coal Mining Company.

IT CANNOT be stated that the immediate future of the West Central Coal District (Iowa, Missouri, Arkansas, and Oklahoma) is one of much promise. Besides having a very limited marketing area the coals are naturally unfitted for gas making or metallurgical purposes according to present standards. The comparatively recent discovery of tremendous new oil and gas fields in and around the district does not indicate that the competition with those fuels will lessen perceptibly. The handwriting on the wall forebodes mechanical cleaning for practically all mines in the district.

At the present time there are installed and in active operation, four washeries in Missouri, two very small units in Arkansas, and one in Kansas. There are no mechanical cleaning plants in Oklahoma or Iowa. All the plants now in operation are wet cleaning plants.

Several points will be evident in the ultimate cleaning plant of the West Central District. All coal will be crushed to a maximum size of 6" or 7". The crushed mine run will be divided into two or more sizes. The primary cleaning will be adjusted to produce a low fixed ash product of about 9.5 percent. The washing units will be adjusted so that the primary refuse will immediately be discarded. The middlings from the large size will be loaded as second-grade nut coal. The middlings from the 0" to 1 1/4" will produce a product considerably higher in ash than in the first flotation, but lower than in the raw screenings, and a better product because of the absence of fines. The very fine sizes will be either screened out ahead of the washing units or the sludge will be treated after washing. Some form of drying will be used in the 0" to 1 1/4" coal.

STUMP AIR-FLOW PREPARATION PLANT

By Richard T. Todhunter

General Manager, Barnes & Tucker Company.

OUR PERCENTAGE of fines is large and the coal comparatively dry, and in order to avoid moisture in coal after cleaning, we decided to go to air cleaning at our No. 12 operation, Barnesboro, Pa. The preparation plant

consists of two units—the Marcus tipple, built in 1931, and the cleaning plant which was put into operation in January, 1933. As the tipple loads run of mine onto two railroad tracks, the prime function of the Marcus screen is to screen the run of mine into 3-inch lump for hand picking and 3"x0 screenings which is delivered to the air-flow cleaning plant. This screen also reunites the picked lump coal and the clean coal from the cleaning plant as prepared run of mine.

The cleaning plant is housed in a building 52 feet long and 34 feet wide, with an average height of 54 feet. In this building are the entire facilities for storing 150 tons of coal and for cleaning the 3"x0 slack at the rate of 360 tons of raw feed per hour. The dust collector supports are not included in these dimensions as they occupy an additional space of 28 feet by 13 feet.

From the 150-ton bin the coal is fed by a battery of six rotary feeders to six Ro-Sieve screens which divide the coal into 3"x $\frac{3}{4}$ ", $\frac{3}{4}$ "x $\frac{1}{4}$ ", and $\frac{1}{4}$ "x0 sizes. The three size products are delivered to their respective air-flow units for cleaning.

3-18" wide units for the 3"x $\frac{3}{4}$ " coal
3-18" wide units for the $\frac{3}{4}$ "x $\frac{1}{4}$ " coal
6-24" units for the $\frac{1}{4}$ "x0 coal
making a total of twelve primary units. This combination of feeders, screens and stump cleaning units divides the plant into three units, and it therefore is possible to screen and clean at one-third to two-thirds capacity if and when necessary.

DRYING WASHED COALS

By F. A. Jordan

Youngstown Sheet and Tube Company.

THE DRYING of washed coals is deserving and getting more serious attention. In the United States, even only three years ago, very little attention was given to it in designing new plants or the operation of those already built. The following mechanical methods are used for removing water from coal after washing: Natural drainage; a scraper conveyor aided by natural drainage; Baum drainage conveyor; shaking screens; secondary screens; stationary screens; centrifugal dryers, and suction filters.

Natural drainage has the high investment charge and falls short of removing sufficient water. While the scraper conveyor has a higher operating cost, it fairly well meets the objection of the previous method in a lower capital cost. Its efficiency in water removal is not good. The Baum drainage conveyor also has a high investment cost and inefficient water removal. Shaking screens seem best adapted to coal larger than $\frac{3}{4}$ ". The so-called wedge wire screens as small as one-fifth millimeter spacing are used rather extensively in removing water from coal $\frac{3}{4}$ " and smaller. They are used in the bottom of scraper conveyors and at the end of washing launders. A number of centrifugal dryers have been successfully used, and have been free of any major repairs. The objection here is that the effluent contains, with the water, a considerable amount of fine coal. The centrifugal dryer does not dry everything put into it. The use of suction filters is a solution to the problem of the prevention of stream pollution. The ob-

jection is that it will not handle large coal, and the fine coal it does treat contains water to the extent that it has to be further dry cleaned.

IMPORTANCE OF ANALYSIS OF SCREEN SIZES

By Carl Scholz

Consulting Engineer, Charleston W. Va.

IN THE earlier period of coal development very valuable assistance was rendered by the United States Geological Survey and the Geological Departments of the various states and later by the Bureau of Mines, through the publication of topographical and geological maps, analysis and fuel tests. The reports show very thoroughly the work of obtaining analysis of face samples, mostly from out-crop openings. Later this was followed up with analysis of mine run coal shipped from the operating mines.

The adoption of screens, picking tables, dry and wet washing plants, and dedusting machines, render the earlier analysis of little value, because it is well known that it is impossible to ship coal as represented by a channel sample. Mine run analysis does not mean very much because comparatively little coal is shipped as mine run and but few analysis of the sizes as actually shipped are available. With this in mind it would seem advisable to bring our analysis up to present day conditions, in order to give the buyer and user dependable information as to what he can expect to receive when he places his order for fuel.

The idea suggested is that each coal producing company have its various grades and sizes of coal analyzed by a recognized laboratory and that the state geologist be requested to compile and publish the data thus obtained. The samples should be taken by a representative of the chemist and not the coal producer, in the manner prescribed by the Bureau of Mines. These reports would be of great value to buyers and users.

Perfection, of course, cannot be expected to be fully realized; it is only something to aim for in mechanical dewatering and beyond which heat drying would be necessary. A difference in the range of sizes in each size (-4 " plus $\frac{3}{4}$ ", $-\frac{3}{4}$ " plus 48 mesh, and -48 mesh) would affect the resultant moisture content, even assuming no change in the efficiency of the mechanical removal of the water, and must be taken into account.

THE DEDUSTING OF COAL

By H. F. Hebley

Allen & Garcia Company.

THE QUESTION naturally arises "Why dedust the coal?" It came about as an adjunct to cleaning. Dedusted coal decreases the drainage time of washed coal. It reduces the sludge nuisance in washery water and helps clarification. It reduces the dust nuisance in dry cleaning plants. If the fines are clean it allows them to be mixed back and reduce the moisture content of the washed product. In coking coals the removal of the fusain in the fine sizes allows the percentage of fusain to be controlled.

Another advantage applicable mostly to the Mid-West coals is the preparation

of a small domestic stoker size free from dust. Certain boiler tests comparing -2 " screenings and 5/16 by 10 mesh stoker coal showed an increase in evaporation of from 7 percent to 10 percent for the smaller size.

Another question that occurs to one's mind is "what can you do with the dust?"

One immediately thinks of briquetting either with or without a binder. Low temperature carbonization similar to the Chemical Technical Company, using 1/25"x0, is also a possibility. It can also be shipped to pulverized fuel plants for burning in the ordinary furnaces after being fed through the mills. The possibility of burning the dust without further regrinding is receiving marked attention and it has met with considerable success. Over 20 plants are in successful operation in Germany, and at least one in America.

Uncontrolled fusain in a coking coal impairs the quality of the coke. As this adulterant is generally found in the fine dust, removal of the dust and its proper remixing in certain cases will improve the coking properties of coal. Fusain, being porous, holds moisture by capillary attraction and increases the drainage problem of washed slack. Removal of the dust will improve the drainage of the small sizes.

DEDUSTING COAL

By O. A. Higgins

Humphreys Coal & Coke Company.

THE OBVIOUS outlets for fine coals are at present limited. One of the largest unexploited fields is that of the burning of fine unmilled coal. A great deal of work in this connection has been done in Germany, and it is most particularly coming to the fore along with the new practice of coal dedusting. Heretofore the problems of handling and disposing of fine coals has interfered with the marketing of this particular product, but with the development of such devices as the "Dry-Flo Car" this question is much nearer settled.

The Humphreys Coal & Coke Company operates a dry cleaning plant rather than a wet plant, and we strive to keep our fines for our coking operations below 3 percent surface moisture. In our coal we find that our fine materials are comparatively low in ash, being less than 7 percent even before treatment.

Experiments with a semi-commercial deduster plant have shown the following results: the deduster reduced the moisture of coal .8 percent, from 3.4 percent before dedusting to 2.6 percent afterwards. The dust contained only .34 percent of moisture, and the dust was 92 percent through 48 mesh screen. Inlet air was not raised in temperature for this experiment.

In another experiment we raised the inlet air to 110 degrees temperature. Here the feed was 4.2 percent moisture, the dedusted coal was 1.8 percent, and the dust was completely dry. Absorption drying is one of the most effective ways of absorbing moisture. We have investigated the question of the cost of dedusting and, based on a plant handling 100 tons per hour of feed, we find that the cost per ton will be in the neighborhood of \$.0308. Thus absorption drying proves its economies.

**DEVELOPMENT OF THE DEDUSTER
IN USE AT THE CHICAGO, WIL-
MINGTON & FRANKLIN COAL
COMPANY'S MINES**

By Thomas Garwood

*Engineer, Chicago, Wilmington & Frank-
lin Coal Company.*

OUR FIRST experiments were along the accepted practice used in Europe of aspirators in which exhaust currents were used, but we were not successful in removing the dust accurately enough to meet the demands of the trade.

We then tried dropping the coal over a series of cascades. Inspection showed the dust was adhering to the coarse coal; also that slugs of fine dust in the raw feed were not being broken up by the exhaust air current. To overcome this objection we introduced a small flat stream of air at high velocity just below the feed plate of the coal into the exhaust air current. This method removed the minus 45 mesh satisfactorily, but the capacity was too small and we could not make a clean cut separation at 10 mesh.

In order to increase the capacity and get a good separation we installed a vibratory scalping screen. The over product was 5/16x10 mesh and the through product was 10 mesh by 0. This over material and 10 mesh contained too much dust adhering to the coal particles. We put the over-size through a deduster, using the high pressure air current to blow the dust loose and the exhaust current to carry it away. This gave a dust-free final product.

In the construction of a new plant it would be wise to put the raw feed through a deduster before putting it over the screen. By doing this you can remove 70 percent of your fine dust at the start and keep it out of your plant.

**THE EFFECT OF MINUS 48 MESH
COAL ON THE QUALITY OF COKE
PRODUCED IN BY-PRODUCT
COKE OVENS**

By H. W. Seyler

*Chief Chemist, Clairton Steel Works and
Furnaces, Clairton By-Product Coke
Works, Carnegie Steel Company.*

THE EFFECT of the minus 48 mesh coal on the coking qualities is considered only when thoroughly mixed with the coarse sizes. It can be seen readily that mixing is very essential to a uniform coke of high quality. In case of any segregation of the fines they would not only lose their beneficial effect, but would prove detrimental. At Clairton, minus 48 mesh coal from the coal washing plant is being mixed with the 48 mesh by 3-inch washed coal. This is accomplished by the use of mixing chutes at transfer towers and shuttle conveyors which distribute the coal in the bins. After the coal has been mixed, there is always the problem of segregation in the bunkers. This difficulty has been solved in a part of the plant by the construction of compartment bins or bunkers which practically eliminate the tendency of the coal to classify, as is the case in large bunkers without compartments.

While it is true that the inerts contained in the minus 48 mesh coal have a beneficial effect upon the physical properties of the coke, the effect of the higher ash and sulphur contained in this mate-

rial on the chemical quality of the coke is quite the reverse. The increase in ash and sulphur in the coal is reflected in the furnace coke which shows .31 percent higher ash and .04 percent higher sulphur. At Clairton it is considered that the improvement in physical properties of the coke produced from the coal containing the sludge more than compensates for the increase in ash and sulphur since the low sulphur content of the coke makes it doubtful if the blast furnaces can show much economy by its reduction. It becomes, therefore, a problem for each coke plant to solve individually as to whether the improved physical qualities compensate for the increased ash and sulphur content resulting from the use of this sludge.

UTILIZATION OF COAL AND SCIENTIFIC RESEARCH

By A. W. Gauger

*Director, Mineral Industries Research
School of Mineral Industries, The Pennsylvania State College.*

IT IS DIFFICULT to understand why the need for research in coal has not been recognized more clearly. The dominant need for today in every line of activity is for research, and the coal industry is no exception to the rule.

If we accept the premise that scientific research has something to offer the coal industry, how are we to go about obtaining its benefits? Research consists of systematic investigation by the experimental method. It must lead to fundamental facts capable of more or less general application. Such investigation must proceed along carefully planned lines with a well defined purpose or policy. American technologists are capable of doing much that will aid in placing the coal industry on a firm basis. A sound program of fundamental investigation is necessary, and a sound program must include economic factors as well as scientific.

The coal industry must be in the position to fill the demand of the consumer for a gaseous fuel at any time. Some of the consuming public may not be satisfied with a return to solid fuel. The development of economic complete gasification systems which could supply gas from coal in strategic locations for transportation to markets through existing pipe lines is a problem which may have great future importance.

Reference to the first problems leads to the following conclusions: Research can aid the industry in cutting its cost of production; it can conserve a valuable natural resource; it can increase the service the industry renders to the consumer; it can enable the consumer to get more efficient utilization from his fuel; it can enable the industry to recapture some of its lost markets; it can aid the industry in finding new markets; and it can form the basis of sound planning for the future.

COMPETITIVE FUELS

By B. R. Gebhart

Illinois Coal Bureau, Chicago

THE COMPETITION of fuel oil with coal in the central west has been severe. It is estimated that the substitution of fuel oil for coal in

its natural market territory during the last 10 years has cost the Illinois coal industry more than 10,000,000 tons in annual production. Natural gas is charged with displacing during 1932 probably 5,000,000 tons of coal from various sources.

There are only two points at issue as between coal on the one hand and oil and gas on the other. These are cost and convenience. Cost is relatively more important in industrial application, and convenience in domestic applications. Both are effected by the method of use. During the past 10 years extensive researches have developed oil and gas burners and methods for their application to a high degree of efficiency.

The stoker, both in industrial and domestic sizes, offers an effective weapon to the coal man. The coal merchants in Chicago, assisted by the operators, determined that under equal conditions, heat could be provided with coal at about one-half the cost of oil, and one-third the price of gas. Extensive advertising resulted in the fact that there are less oil burners per capita in Chicago than in any other city in the United States with a population of over 100,000.

The success of coal competition with oil and gas depends: first, upon its being made available at the lowest possible cost; and second, in such form that it can be utilized not only at a high degree of efficiency but with convenience and satisfaction. This problem can not be separated as between the mine and the market.

BUDGET CONTROL OF OPERATIONS

By G. G. Crowder

Peabody Coal Company.

IN DISCUSSING budgets in the mining industry we find two schools: one using gross money or man hours; and the other a unit or per ton basis. When using the man hour quota basis, it is difficult to prepare and present in advance of operations sufficient concrete data to permit the sales and financial departments to lay their program for three, six, or twelve months in advance. The proper per ton basis makes it possible to prepare a concise statement of each mine showing production and cost per ton for any number of working days in a month.

The operating department uses this budget to control their organization and get the results they wish. It enables them to know at any date of the month, with a given number of working days, what cost they should have. The budget is made by the engineering and planning divisions, from about a three-month experience, to arrive at an average working day, idle day, and Sunday. It is changed each time there is a change in wage scales or general physical condition of the mine.

All this necessitates a very close working arrangement between the accounting and operating departments, and if properly worked out, the main accounting offices can dispose of all expense ledgers and use the records compiled at the mines for cost purposes, for their financial records at the end of the month. Another distinct advantage in making use of the daily cost records prepared at the mines for the financial reports is that it eliminates friction and misunder-

standings between departments, for there is no change between the mines and the finished reports as far as labor and supplies are concerned.

NECESSITY FOR DISCIPLINE IN ANTHRACITE MINES

By James H. Pierce
Consulting Engineer, Scranton, Pa.

A PREREQUISITE for good discipline is a properly trained official staff. In training this personnel one must distinguish between knowledge and intelligence, for while certain officials may have ample knowledge, they may not have the intelligence to safely handle their work.

The first obligation of any official is to teach their men the work, and the necessity of doing it. Many officials fail to distinguish between "issuing instructions" and "instructing." It requires many times more effort to carry out instructions than to issue them. A great number of accidents occur because foremen issue orders and fail to see that they are properly executed.

There are nine reasons why discipline is more of a necessity in anthracite than in bituminous mines:

1. A cross-section of the mining personnel covers many nationalities with a background of discipline and training peculiar to each.

2. Anthracite mines are operated under complex geologic conditions.

3. Anthracite mines often extract from as many as 16 veins at one time—thus pillar extraction must be timed accurately to avoid injury.

4. In a great portion of anthracite mines pillars are in a badly squeezed condition, which makes for dangerous workings.

5. Many of the veins are heavily inclined to the horizontal, which means additional guarding for the employees' safety.

6. Most companies pay employees by car instead of by the ton. Rigid rules must be enacted to see that clean coal is loaded.

7. Anthracite coal is prepared in at least seven sizes. Rigid care must be taken to see that proper blasting is done.

8. Double and triple shifting is prevalent, which means more training of men.

9. There is a prevalence of gas, making it difficult to localize air.

WHAT SHALL BE DONE WITH THE UNEMPLOYED MINER?

By Clarence E. Pickett
Executive Secretary, American Friends Service Committee.

IT IS OBVIOUS that no single agency or agencies can ever meet the problem of "What to do with the unemployed miner." It is too big. It is the obligation of the Federal Government. During the winter of 1931-1932 the American Friends Service Committee fed a maximum of 41,000 children a day in the bituminous coal communities. These were children of unemployed miners in Kentucky, West Virginia, Maryland,

Pennsylvania, Illinois, and Tennessee. A study made by the committee indicates that more than 200,000 miners who will never make a living at their trade again, involve a population of a half million people.

A study was made of the coal miners in West Virginia and Kentucky which revealed that 81 percent were white Americans; 11 percent were colored, and 7 percent were foreign born; 55 percent were under 35 years of age, and 64 percent between the ages of 20 and 44. The average family included five children, the wife and husband.

As to what the committee has done for the unemployed miners. Our first experience, carried out at Crown Creek, W. Va., developed a child feeding program. Then a home garden system was inaugurated. We discovered a man who had formerly made brooms, that has now grown into a state industry. Also other furniture is made, and the women have been taught to weave rugs. The second experiment occurred in Pennsylvania, in a group of six communities. Small scale gardening was again carried out. The people in this community made their own looms and spinning wheels. We now buy raw wool as soon as it is clipped at 12 cents a pound, washing, drying, dyeing, carding, spinning, weaving, and tailoring it ourselves. We now provide clothing for the entire community.

The important goal is to produce an element of security and a self sustaining policy which will relieve the industry and the miners, themselves, of the terrible prospect of perpetual relief. First, there should be large scale allotments of land under supervision; tillable land. Operators should be willing to give a 20-year lease on land suitable for this purpose and contribute the materials which are now in unoccupied houses. This would involve a plan whereby labor could be work-relief.

HOUSING PROBLEMS

By Morris Coulter
Chief Engineer, Clearfield Bituminous Coal Corporation.

THE MINER living in the modern mining town of today is probably better housed and enjoys more material advantages than he would if living under similar circumstances in our urban communities or industrial centers. Company towns may not be profitable financially, but they do insure an ample labor supply, attract the most desirable class of labor, and keep it satisfied and contented.

In the early stages of the industry houses were constructed in blocks of 8 or 10 to a square, with the privies, coal houses, and water supply in the center of the block for the common use of all houses. Streets were not graded, drainage was not cared for, and the social life was greatly warped. As the coal industry grew into a major industry and expanded, it became a pioneer in development, reaching out into remote regions which were uninhabited or far removed from the center of population. Thus rose the necessity for company-owned towns. Nineteen hundred twenty census figures show 50 percent of mine labor housed in these towns, and the present figure is probably much higher.

The first consideration in the selection of a mining town is the necessity for

housing labor, and the attracting and holding of labor depends in a very large measure upon what the operator has to offer in housing facilities. The town should be laid contiguously rather than in clusters. Streets should be graded, and with proper drainage. Spacing of houses should provide ventilation, light, privacy, and fire protection. The community garden idea is spreading. Wash and change houses, with laundry, have been erected in nearly all towns. The modern house has a cellar, front and rear porches, electricity, and running water. Some have baths.

LEGISLATION

(Continued from page 16)

The mining industry feels that such an activity contemplated at this, a so serious time, is beyond practical execution and would result in an increase in costs and a chaotic condition in industry."

THE FOLLOWING record of bills now before Congress is presented for your aid:

Anti Trust

To amend Sections 1, 2, and 3 of an act of July 2, 1890, entitled, "An act to protect trade and commerce against unlawful restraints and monopolies." (H. R. 5305—Lee of Missouri, referred to the Committee on the Judiciary.)

Commerce

Joint resolution to prevent interstate commerce in certain commodities and articles produced or manufactured in industrial activities and under conditions which produce unfair competition and restraints of trade and are injurious to the general welfare, and to regulate interstate transportation, and for other purposes. (H. J. Res. 168—Celler (by request), referred to the Committee on Labor.)

To regulate interstate commerce. (H. R. 5399—McSwain, referred to the Committee on Interstate and Foreign Commerce.)

Currency

Resolution requesting the delegates appointed by the President of the United States to the International Conference for the Stabilization of International Exchanges to work unceasingly for an international agreement to remonetize silver on a basis not to exceed 16 fine ounces of silver to one fine ounce of gold. (H. R. 129—Scrugham, referred to the Committee on Foreign Affairs.)

(H. R. 141—Martin of Colorado. Same as H. R. 129.)

To provide for regulated expansion of currency and credit, to reduce the national debt, to raise the price level of commodities, and for other purposes. (H. R. 5685—Scrugham, referred to the Committee on Banking and Currency.)

To preserve and protect the gold standard through the establishment of an auxiliary monetary reserve of silver and the issuance of silver certificates payable in their gold value equivalent and under such regulations as will provide protection to the gold standard and

(Continued on page 34)

PERSONALS

ARCHIBALD DOUGLAS, of the firm of Armitage, Douglas & McCann, recently visited the properties of the United Verde Extension Mining Company, at Jerome, Ariz., of which company he is a director.

HOWARD I. YOUNG, president, The American Zinc, Lead and Smelting Company, and a director, The American Mining Congress, was in Washington, May 18, conferring with officials of that organization.

ROBERT E. TALLY, United Verde Copper Company, was a recent New York visitor.

PAUL WEIR, vice president, Bell & Zoller Coal & Mining Company, of Chicago, attended the conference of the Illinois Coal Operators with Government officials in Washington early in May.

DR. L. E. YOUNG, vice president, Pittsburgh Coal Company, served as chairman of the committee on arrangements for the recent convention of the Coal Division, The American Mining Congress.

DONALD A. CALLAHAN, president, Callahan Lead Zinc Company, of Idaho, was an eastern visitor during the month, spending several days in Washington, conferring with officials of the Mining Congress, of which organization he is a director.

CLEVELAND E. DODGE, vice president, Phelps-Dodge Corporation, was in Washington in May.

J. B. PUTNAM, Pickands-Mather Company, Cleveland, Ohio, was in Washington May 17.

DR. H. FOSTER BAIN, director of the Copper & Brass Research Association, was a visitor in Pittsburgh during the recent coal convention of the American Mining Congress.

W. J. JENKINS, director, The American Mining Congress, and president of the Consolidated Coal Company of St. Louis, Mo., attended the annual meeting of the Coal Division, after spending several days in Washington conferring with Government officials on the state of the coal industry.

ROBERT E. DWYER, Anaconda Copper Company, was a Washington visitor early in May.

JULIAN D. CONOVER, secretary, The American Zinc Institute, was in Washington on business, May 18.

H. A. GUESS, American Smelting & Refining Company, has been in Europe.

DR. H. C. PARMELEE, vice president, McGraw-Hill Publishing Company, and editorial director, has been appointed editor of *The Engineering & Mining Journal*, vice A. W. Allen, who joins the foreign staff of that organization.

BRUCE TYLER, Clinchfield Coal Corporation, was in Washington on tax matters, late in May.

JOHN A. BURGESS, consulting engineer, San Francisco, has been placed in charge of the properties of the Carson Hill Gold Mining Company, at Melones, Calif.

PERCY A. ROCKEFELLER, JOHN A. COE, and J. R. HOBIBNS were reelected directors for three ensuing years of Anaconda Copper Mining Company. Vacancies on the board created by deaths were filled by vote of directors for the unexpired part of their terms, and not by vote of stockholders. Consequently successors of John D. Ryan and B. B. Thayer, both deceased, will be elected by directors.

H. W. COPE, formerly assistant director of engineering, now becomes assistant to the vice president, of the Westinghouse Electric and Manufacturing Company, responsible for the coordination of certain headquarters engineering departments and district office engineers.

WALTER ROBISON, president, the Y & O Coal Company, presided at the opening session of the Coal Division, The American Mining Congress.

R. L. IRELAND, JR., Hanna Coal Company, was a special guest at a luncheon which opened the convention of the Coal Division, The American Mining Congress, of which Division he is national chairman.

DEAN G. M. BUTLER, University of Arizona, has been named a member of a committee for the National Research Council.

OGDEN L. MILLS, former Secretary of the Treasury, has been elected a director of the Cerro de Pasco Copper Company.

DANIEL C. JACKLING, president of the Utah Copper Company, was recently awarded the John Fritz gold medal, and award, for notable engineering achievement.

C. J. RAMSBURG, vice president, The Koppers Company, opened the tenth annual convention of the Coal Division, The American Mining Congress.

GEORGE HARRINGTON, president, Chicago, Wilmington & Franklin Coal Company, Chicago, is chairman of the local committee on arrangements for the National Coal Association convention.

L. N. THOMAS, vice president, Carbon Fuel Company, Carbon, W. Va., has been transferred from the operating department of his company to the sales end, and will make his headquarters at Cincinnati, Ohio.

GEORGE S. RICE, United States Bureau of Mines, attended the recent meeting of The American Mining Congress, at Pittsburgh.

L. W. SHUGG, General Electric Company, has been in Chicago for several weeks, in the interest of his company, in their exhibit at the Century of Progress.

REAMY JOYCE, vice president, Joyce Watkins Company, Chicago, has resigned that position, and has joined the Koppers Company, Pittsburgh, Pa., where he will be identified with their Wood Preserving Group. Mr. Joyce is also chairman of the Mine Timbers Section, Coal Division, The American Mining Congress.

JOHN T. RYAN, Mine Safety Appliances Company, Pittsburgh, Pa., was recently elected chairman of the Manufacturers Section, Coal Division, The American Mining Congress.

THOMAS G. FEAR, assistant to president, The H. C. Frick Coke Company, has been appointed chairman of the committee on new developments, for the American Mining Congress' Coal Division.

J. B. WARRINER, president, Lehigh Navigation Coal Company, has been confined to his home in Philadelphia, because of illness.

SAMUEL A. TAYLOR, constructing engineer, Pittsburgh, furnished an interesting exhibit at the recent meeting of the American Mining Congress, when he brought to light a photograph of the last convention held by that organization, at Carnegie Hall, just 25 years ago.

STEWARD PROSSER has been elected a director of the Utah Copper Company.

H. V. ERBEN has been appointed manager of the Switchgear Sales Division of the central station department of the General Electric Company, with headquarters at the West Philadelphia office.

DR. S. M. KINTNER, vice president in charge of engineering of the Westinghouse Electric and Manufacturing Company, announces the appointment of R. E. Hellmund as chief engineer.

HAVE YOU HEARD—?

UNITED STATES STEEL CORPORATION announces the following additions to its commercial staff, headed by C. F. Wood, commercial vice president: F. D. Foote, assistant to vice president of the Pittsburgh Forging Company and the Greenville Steel Car Company; E. P. Brooks, assistant to vice president, formerly of the sales executive staff of the Sears Roebuck Company.

AT THE ANNUAL meeting of the American Welding Society the Samuel Wylie Miller medal was awarded to H. H. Moss, The Linde Air Products Company, "for his achievement in the application of fusion welding and oxy-acetylene flame cutting." The Samuel Wylie Miller medal is an annual award of the American Welding Society and is presented for meritorious contributions to the science and art of welding.

GENERAL OPPOSITION is announced by importers and exporters to suggestion by Secretary of Commerce Roper that Government economy plans may force curtailment of the activities of the Department of Commerce. General opinion is that economies proposed would cripple service just when foreign trade is beginning to pick up.

THE UNITED STATES LINER *Leviathan* has made her final trans-Atlantic voyage of the year and possibly for all time unless there is an amazing improvement in first-class travel. Permission to cancel this year's remaining six scheduled voyages of the *Leviathan* was granted by the United States Shipping Board, after they had studied the voyage losses piled up by the liner during the last several months. It is estimated that these losses ranged from \$50,000 to \$80,000 a round trip.

THE MOSCOW NEWSPAPER *For Industrialization*, organ of Commissariat for Heavy Industry, bids for establishment of normal relations between Soviet Russia and United States; hints at profitable business to be enjoyed by America under recognition.

GOVERNOR PINCHOT, of Pennsylvania, asked President Roosevelt for action on coal legislation which he said is being prepared by Secretary of Interior Ickes. Governor Pinchot said the fact that in the anthracite regions of Pennsylvania wages were much higher than in West Virginia and Kentucky, made conditions in the Keystone State more acute. He also brought to the White House a petition signed by 5,000 anthracite miners in Schuylkill County asking for an investigation of working conditions in the mines.

ACCORDING TO J. F. Dewhurst, economist for the American Iron & Steel Institute, steel ingot production in 1932 was 76 percent below the 1929 figure, whereas the industrial production was but 47 percent.

A RESOLUTION granting President Roosevelt authority to carry out negotiations for lowering tariff rates is ready for introduction in the Senate. The measure probably will be introduced after the Muscle Shoals legislation is out of the way, an administration spokesman said. Under the terms of the resolution Mr. Roosevelt would be empowered to negotiate along the lines of reciprocal tariffs and other international agreements.

AMERICAN TARIFF LEAGUE, INC., urges its members to oppose National Industry Recovery Bill. Asks embargo on use of foreign products in public works program and on imports of goods landed in United States at prices below U. S. production costs.

MONTGOMERY WARD & COMPANY will refund the 3 percent Illinois sales tax to customers of its 28 stores who present sales slips up to July 1. Thereafter, the company will turn over unclaimed refunds to local unemployment relief agencies.

UNION PACIFIC officials are planning a new style passenger train on its transcontinental lines, capable of averaging 100 miles an hour. Plans call for dirigible-shaped gas-electric or Diesel engine locomotives, with passenger cars also to be streamlined to eliminate wind resistance.

AT A MEETING of the board of directors of the Virginia Iron, Coal & Coke Company, held in New York on April 20, 1933, Mr. J. J. Sellers was elected vice president of the company, with offices at Roanoke, Va.; Mr. W. F. Richmond was elected secretary and treasurer of the company, to fill the vacancy caused by the recent death of Mr. J. W. Cure, with offices at Roanoke, Va.

MORE THAN 50 PERCENT of the cotton spindles in the United States have approved proposal for a shorter work week based on 40-hour shifts, according to George A. Sloan, president of the Cotton-Textile Institute.

AT A MEETING of the board of directors of the Nevada Consolidated Copper Company, an offer by the Kennecott Corporation to acquire all the properties of the Nevada Consolidated Copper Company was accepted subject to approval and consent of stockholders of Nevada to be held June 1, 1933. The offer is one share of Kennecott for each two shares of Nevada.

TWO CARLOADS of copper wire—230 miles in all—are being used in the construction of a new totalizing machine being built at the Arlington Park race track in Chicago. The machine is almost human. From 150 windows it issues tickets to those who want to bet. It totals the amount of money received, registering it so the betters may know at all times the odds on the different horses. It is the last word in totalizing machines and is to cost \$250,000.

REPRESENTATIVE JAMES BECK, in address before Massachusetts Bankers' Association, believes that President Roosevelt's doctrines destroying government's division of powers as prescribed by Constitution are wholly wrong.

MAJOR ANTHRACITE PRODUCERS decided that general retrenchment policies calling for the operation of low cost collieries and the subsequent shutting down of dozens of units which may throw thousands of mine workers into idleness was necessary. The reason, as given by Major W. W. Inglis, president, the Glen Alden Coal Company, is "We can not compete with depression priced substitutes and pay wartime wages for the production of anthracite coal." The decision was reached as the result of an unsuccessful culmination of the wage reduction negotiations brought to an abrupt end on April 27 in Philadelphia by the intervention of the U. S. Department of Labor.

MODERN MINING EQUIPMENT

SPECTACULAR discoveries and developments of its famous research laboratory are shown and explained in the "House of Magic," the feature of the General Electric Company's exhibit at A Century of Progress Exposition. The company has concentrated nearly all of its displays in 9,000 sq. ft. of space on the main floor of the great circular hall of the Electrical Building. In the little auditorium which is completely air conditioned 200 people can be accommodated for each series of lectures and demonstrations, comprising one of an all-day series of performances which illustrate the striking advances in the electrical art that have been made during the last few years. The lighting system alone, utilizing a combination of the newest types of equipment, provides an interesting demonstration in addition to furnishing adequate lighting.

ALLIS-CHALMERS MFG. CO., Milwaukee, Wis., announces a new single-stage water-cooled rotary air compressor. It covers a complete line of up-to-date rotary air compressors and vacuum pumps of the multi-cellular, sliding-vane type, having a range of volumes from 50 to 2,000 c. f. m., at pressures up to 150 lbs. and vacuums up to 29.85 in. mercury.

THE WOOD PRESERVING Corporation, Koppers Building, Pittsburgh, Pa., have established an operating unit, which will be supervised by Reamy Joyce and Sherman S. Watkins, formerly of the Joyce-Watkins Company, Chicago, Ill.

The activities of Messrs. Joyce and Watkins will be principally in connection with the Baltimore & Ohio Railroad cross-tie production and in the operation of the Green Spring, W. Va., treating plant.

THE CENTRAL FOUNDRY CO. announces that on and after May 1 the Chicago sales office of its Universal Pipe Division will be located at 1629 Wellington Street, corner Paulina Street.

THE MARTIN-DECKER Shunt Type Tension Indicator is very completely described in their new folder, "Weight Recording, Measurement and Control." Copies may be secured on request to the Martin-Decker Corporation, 3431 Cherry Avenue, Long Beach, Calif.

ANNOUNCEMENT HAS BEEN received from the McGraw-Hill Catalog and Directory Company of New York of a change in the publishing plan for their Keystone Coal Buyers Catalog, which for years has been known among the trade as the authoritative reference work on coal and coal sources. The 1933 edition, just off the press, is known as the Keystone Directory for Coal Buyers. The publication features an up-to-date directory covering the active commercial coal mining companies with pertinent information on each of their operations. Data given includes name and address of the company, name of important sales officials and operating heads, official name of mine, shipping point and serving railroad, seam mined and thickness of seam, daily tonnage capacity, preparation methods in use, etc. The publishers announce that when up-to-date information on analyses and geological data can be secured from authoritative sources this type of matter will again be published. The user of the new directory will, however, find in the advertising section a mass of up-to-date and valuable data on the particular coals and facilities of many of the leading coal companies of the country. The new directory sells at \$15 a copy and can be secured by writing to the publishers at 330 West Forty-second Street, New York.

THE NEW OFFICE BUILDING of the Worthington Pump and Machinery Corporation, situated adjacent to the corporation's plant at Harrison, N. J., was opened May 1. The general and executive offices, formerly situated at 2 Park Avenue, New York, have been moved to the new location for better co-ordination with manufacturing and sales operations. The local sales office will be continued at 2 Park Avenue.

LEONARD W. SAIN, for the past seven years manager of sales, Universal pipe division of the Central Foundry Company, has resigned. Raymond F. Garcia has been appointed general manager of sales, universal pipe division, succeeding Leonard W. Saine. Mr. Garcia will make his headquarters at the general offices of the company, 420 Lexington Avenue, New York.

THE CATERPILLAR Tractor Company has begun its publicity campaign on its "Caterpillar" Seventy Tractor. Specifications and high lights on the construction and performance of this tractor are set forth in a recent broadside, dated April 1, a copy of which will be gladly furnished upon request to the company at Peoria, Ill. A complete catalog is now in the process of printing.

CUTTING COSTS by redesigning is the theme of a new book just published. "Designing for Arc Welding" is the title of the book, which contains prize winning papers submitted in the \$17,500 Second Lincoln Prize Competition. The published papers are those judged the best from some 400 submitted in the competition and include the work of foremost engineers in the United States and abroad.

One of the principal points on which the papers in the competition was judged was the savings in costs made by the use of arc welding. Each paper gives actual costs and shows how the savings were effected. A resume of the possible savings in all industries represented by the papers submitted shows a total estimated savings of over one billion dollars a year, if arc welding were used as extensive as possible.—(American Metal Market.)

THE JEFFREY Manufacturing Company has issued a new 16-page, two-color Catalog No. 559, describing their Track Type Coal Cutters. Copies may be obtained free upon request to the company at Columbus, Ohio, or to any of its district offices or service stations. A new and interesting bulletin describing the new Jeffrey Aerovane Fan in detail, has just been published by that company. A copy will be gladly furnished upon request to the Jeffrey Manufacturing Company, Columbus, Ohio, referring to Bulletin No. 566.

"PORTABLE CABLE," a new booklet recently issued by the General Electric Company, gives complete information concerning its use for mining machinery, gathering-reel locomotives, electric shovels, arc welders, and similar uses. Copies may be obtained upon request to the company at Schenectady, N. Y.

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Our specialty—Testing bituminous coal lands
Satisfactory cores guaranteed

MINING EVENTS

(Continued from page 14)

THE TOTAL quantity of crude magnesite mined in the United States in 1932 was 38,462 short tons, with an approximate value of \$283,304, according to reports furnished by producers. This represents a decrease of 47.7 percent from the quantity mined in 1931 (73,602 short tons).

■ ■ ■

THE FOLLOWING informative letter, received by the Mining Section, National Safety Council, from Manager Davis, of the Phelps Dodge Corporation, Stag Canon Branch, Dawson, N. Mex., indicates that the mine employees of this company are receiving concrete benefits through wearing of safety toe shoes:

"In the March, 1933, Mining Section News Letter, we noticed the accident experience of the Carnegie Steel Company on the safety shoe question. This prompted us to refer to the experience at Stag Canon Branch of Phelps Dodge Corporation, with the following results:

Prior to After adop'n
adopt'n safety safety shoes
shoes, 1926-27, 1928-32,
incl. (2 yrs.) incl. (5 yrs.)

Toe injuries	30	20
Foot injuries	34	18
Heel injuries	2	2
Ankle injuries	29	1
Total	95	41

"On the basis of per thousand shifts worked, the two-year period shows a rate of .145, while for the five years following the adoption of safety shoes this rate was reduced to .057."

THE OLIVER MINING COMPANY has surrendered its lease on Fayal No. 1 iron mine property, effective August 1, 1933. According to Skillings, much interest attaches to this statement, as this is the first property in Minnesota to be dropped by the Oliver company since numerous similar announcements have been made by other operators in the ranges. It is obvious that the big producers are being forced to reduce the heavy carrying charges on mineral properties.

ASSOCIATION ACTIVITIES

(Continued from page 21)

electric clock; E. W. Judy, Harwick Coal & Coke Company, golf bag; O. G. Leichter, Weirton Coal Company, wrist watch; W. D. Turnbull, Westinghouse Electric & Manufacturing Company, golf balls; Ben McCrackin, Consolidation Coal Company, golf balls; Mrs. L. E. Young, electric mixer; Mrs. J. F. Joy, electric mixer.

THESE MEETINGS have been such highly specialized business sessions, that they have attracted very few of the wives of the delegates. However, this year special effort was made to "bring out the ladies," and in all, some 30 attended, and were welcomed by the local ladies' group, who arranged a series of entertainments that were delightful. The ladies of the Woman's Auxiliary of the American Institute of Mining and Metallurgical Engineers, Pittsburgh Section, were hostesses, and, if anything, they outdid their distinguished husbands in hospitality.

NO BETTER ENTERTAINMENT could have been given the delegates than that offered them. The ladies committee on entertainment: Mrs. Ralph Davis, Mrs. L. E. Young, Mrs. J. T. Ryan, Mrs. M. D. Cooper and Mrs. Lewis O. Lougee are to be congratulated. Monday night's reception and dance proved the means of introducing each operator and manufacturer to the other. Tuesday's "Night in Old Heidelberg" was a howling success,

with the fake gambling tables and draught beer-bar all crowded to capacity. The informal dinner and dance was treated by "Rosey" Rosewell, of Cliquot Club hour fame, who recently broke Floyd Gibbons' record for fast speaking over the radio. Teas and bridge parties were held for the entertainment of the ladies in the afternoons, while trips to various points of interest in Pittsburgh, under the direction of M. D. Cooper, Division General Superintendent for the Hillman Coal and Coke Company, and a demonstration at the Experimental Mine and Explosives Station of the United States Bureau of Mines, under the supervision of Harry C. Greenward, physicist, closed the convention officially on Friday. The demonstration at the experimental mine included: extinguishing a fire with rock dust; ignition of coal dust by gelatin dynamite; ignition of coal dust by an electric arc; inspection of the mine; safe and dangerous explosives; and imitation of coal dust explosion by a blow-out shot of black blasting powder.

IT WAS a great day for coal. It was a great convention. A great exposition. All of those skeptics as to the future of the coal industry should observe and adjust their views. Pittsburgh as a convention city for the coal industry is unsurpassed.

AT A SPECIAL meeting of the members of the Manufacturers' Section, Coal Division, the American Mining Congress, held at the William Penn Hotel on Wednesday afternoon, May 10, the following gentlemen were re-elected for a period of three years: E. A. Williford, National Carbon Company, Cleveland, Ohio; C. B. Officer, Sullivan Machinery Company, Chicago, Ill.; L. W. Shugg, General Electric Company, Schenectady, N. Y.; J. C. Wilson, Ohio Brass Company, Mansfield, Ohio.

IT WAS MOVED and passed at this meeting that the Board of Governors raise its quota from 13 to 14 members. New members elected to the board for a three-year period are: J. M. Duff, Phillips Mine and Mill Supply Company, Pittsburgh, Pa.; F. E. Mueller, Roberts and Schaefer Company, Chicago, Ill.; C. C. Whaley, Myers-Whaley Company, Knoxville, Tenn.

OTHER MEMBERS of the board include: P. H. Grunnagle, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.; J. T. Ryan, Mine Safety Appliances Company, Pittsburgh,

MOST



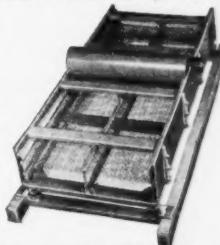
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ADVERTISING INDEX

Ensign-Bickford Co.	4	Mine Safety Appliances Co.	Back Cover
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Hercules Powder Co.	33	Roberts & Schaefer Co.	3
Hoffman Bros. Drilling Co.	32	Robinson Ventilating Co.	32
Joy Brothers, Inc.	5	Universal Vibrating Screen Co.	33

Pa.; G. R. Delamater, W. S. Tyler Company, Cleveland, Ohio; B. G. Shotten, Hendrick Manufacturing Company, Pittsburgh, Pa.; R. C. Becker, McGraw Hill Company, New York City; W. C. Richards, A. Leschen & Sons Rope Company, St. Louis, Mo.; W. E. Goodman, Goodman Manufacturing Company, Chicago, Ill.

A MEETING of the Board of Governors immediately followed the meeting of members of the Manufacturer's Section. At the new election of officers for the current year, John T. Ryan, Mine Safety Appliances Company, Pittsburgh, Pa., was elected chairman. George R. Delamater, W. S. Tyler Company, Cleveland, Ohio, was elected first vice chairman; C. B. Officer, Sullivan Machinery Company, Chicago, Ill., second vice chairman; and B. G. Shotten, Hendrick Manufacturing Company, Pittsburgh, Pa., third vice chairman.

■ ■ ■

National Coal Association Convention,
Drake Hotel, Chicago, June
15, 16 and 17

THE NATIONAL COAL Association, representing the bituminous coal mine operators of the United States, will hold its fourteenth annual meeting at the Drake Hotel in Chicago, June 15-17. James D. Francis, president of Appalachian Coals, Inc., and Harry L. Findlay, chairman, organization committee, Northern Coals, Inc., will discuss "The Regional Sales Agency Plan." A session will be devoted to research, during which John C. Cosgrove, president, West Virginia Coal & Coke Corporation, will describe the purposes and plans of Bituminous Coal Research, Inc. The president of the American Gas Association will also address this session. Among other subjects included in the program are "Fuel Distribution," "Credit Protection," "Safety," and "Workmen's Compensation."

■ ■ ■

THE AMERICAN Mining Congress, on May 4, called a special meeting of those interested in the proposals of the administration looking to a change in the present tariff policy. Those attending were: J. T. Claiborne, Freeport Sulphur Company, New York City; An-

drew Fletcher, St. Joseph Lead Company, New York City; J. D. Conover, American Zinc Institute, New York City; R. M. Roosevelt, Eagle Picher Lead Company, New York City; H. P. Henderson, Texas Mining & Smelting Company, Laredo, Texas; F. S. Mulock, United States Smelting, Refining & Mining Company, New York City; A. G. Mackenzie, Utah Chapter, American Mining Congress, Salt Lake City, Utah; A. E. Peterman, Calumet & Hecla Copper Company, New York City; W. W. Lynch, Phelps Dodge Corporation, New York City; M. D. Harbaugh, Tri-State Zinc & Lead Ore Producing Association, Miami, Okla.; D. A. Callahan, Coeur d'Alene Operators, Idaho (Wallace); J. F. Callbreath, The American Mining Congress (Secretary); A. W. Dickinson, The American Mining Congress, Washington, D. C.

LEGISLATION

(Continued from page 29)

operate to restore and stabilize commodity prices. (H. R. 5204—White, referred to the Committee on Coinage, Weights, and Measures.) (Same as H. R. 5233.)

Resolution requesting that delegates to the International Economic Conference work for the remonetization of silver. (H. Res. 133—White, referred to the Committee on Foreign Affairs.)

Resolution appointing a committee of five Members of the House of Representatives by the Speaker to work with the delegates appointed by the President to the international conference for the purpose of stabilization of international exchanges. (H. Res. 153—Boylan, referred to the Committee on Rules.)

To provide a more stable monetary system by substituting multi-metalism in lieu of monometalism or the single gold standard. (H. R. 5717—White (by request), referred to the Committee on Coinage, Weights, and Measures.)

To impose a tax on money permanently invested in foreign countries. (H. R. 5306—Carpenter of Kansas, referred to the Committee on Ways and Means.)

Labor

To promote employment of adult labor by preventing interstate commerce in the

products of child labor, and for other purposes. (H. R. 5744—Kvale, referred to the Committee on Labor.)

To establish minimum-wage requirements for workers employed in the production or manufacture of articles shipped, transported, or delivered in interstate or foreign commerce. (H. R. 5332—Cannon of Wisconsin, referred to the Committee on Labor.)

Resolution providing for the consideration of S. 158—(the Black bill.) (H. Res. 142—Connery, referred to the Committee on Rules.)

Resolution providing for the consideration of H. R. 4559 . . . "To provide for the establishment of a national employment system and for cooperation with the states in the promotion of such a system, and for other purposes." (H. Res. 157—Connery, referred to the Committee on Rules.)

Resolution authorizing the Committee on Labor to have printed for its use additional copies of hearings on 30-hour work week. (H. Res. 159—Connery, referred to the Committee on Printing.)

Miscellaneous

To provide for the establishment and maintenance, under the Bureau of Mines, of a research station at Salt Lake City, Utah. (S. 1665—King, referred to the Committee on Mines and Mining.)

Stabilization

To encourage national industrial recovery, to foster fair competition, and to provide for the construction of certain useful public works, and for other purposes. (H. R. 5755—Doughton, referred to the Committee on Ways and Means.)

To provide for cooperation control of industry during the existing national economic emergency. (H. R. 5521—Mead, referred to the Committee on the Judiciary.)

Giving the protection of the law to the worker's right to work and to a just share of the employment available; forming trade associations to stabilize business and to provide unemployment insurance, etc.; and imposing certain excise taxes, with privilege drawback. (H. R. 5232—Lewis of Maryland, referred to the Committee on Ways and Means.) (Same as H. R. 5271.)

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The 1933 COAL CONVENTION Papers

The 1933 A. M. C. Coal Convention Papers will be printed this year exclusively in the American Mining Congress "Year Book of Coal Mine Mechanization" and not, as formerly, in a special edition of the Mining Congress Journal.

The 1933 *Year Book* will be issued in July.

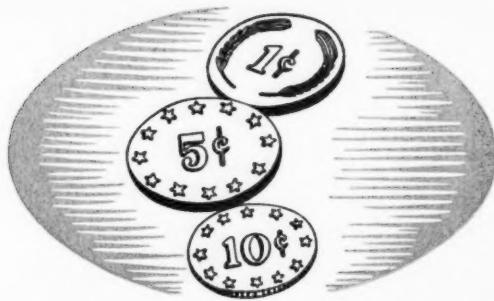
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YOUR 16¢ PER TON PROFIT *that is written as LOSS...*

RELIABLE statistics reveal that the total accident bills of the coal industry each year are exceeding \$80,000,000 which means that for each ton of coal produced (based on the average of 500,000,000 tons yearly) sixteen (16) cents per ton that should have been profit is being written as loss. Many individual producers, both large and small, have reduced this startling national average to compensation costs as low as 0.75 to 1.8 cents per ton. How are they doing it?

The answer is organized safety and the

proper use and application of MSA Safety Appliances from Skullgards and Shoes to modern approved Edison Electric Cap Lamps and Rock Dusting Equipment. From their comparatively small investment in MSA Equipment these modern coal operators are receiving remarkable dividends.

Put your safety problem up to MSA,—headquarters for time-tested and approved mine safety appliances of every description and application. We will be glad to cooperate with you in formulating plans that will effect similar savings in your mining operations.

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M. S. A. EQUIPMENT—Edison Electric Cap Lamps . . . Skullgards . . . Goggles . . . Safety Shoes . . . Rock Dust Distributors . . . Oxygen Breathing Apparatus . . . Self Rescuers . . . All-Service Masks . . . Gas Indicators and Recorders . . . Safety Clothing . . . Inhalators . . . First Aid Equipment . . . Safety Signs . . . Miscellaneous Mining Specialties . . . Descriptive Bulletins will be sent on request.



